PAPER TRADE JOURNAL

- *Inventive Improvements at Halifax*
- *How Crossett Likes Grooved Table Rolls*
- *Today's Outlook For Insulation Board*

December 19, 1955

WOOD PULP

G

Established 1886

"It is eternal struggle as well as eternal vigilance that is the price of liberty."

JOHN LORD O'BRIAN

Freedom's battle is never done. We wage it daily — guarding our hard-earned rights, giving comfort, extending aid and guiding those who grope for liberty. Paper, the product of the Pulp and Paper Industry, carries the message of our resolution to all who cherish the dignity of man.

GOTTESMAN & COMPANY

— INCORPORATED —

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to our old customers

Thank you for your confidence in our products.

to our new customers

A hearty handshake and our promise to produce felts which will merit your continued patronage.

to our returning customers

Welcome home! Huyck expanded services are geared to help you.

a very merry christmas

and a prosperous Happy New Year **to all our friends**

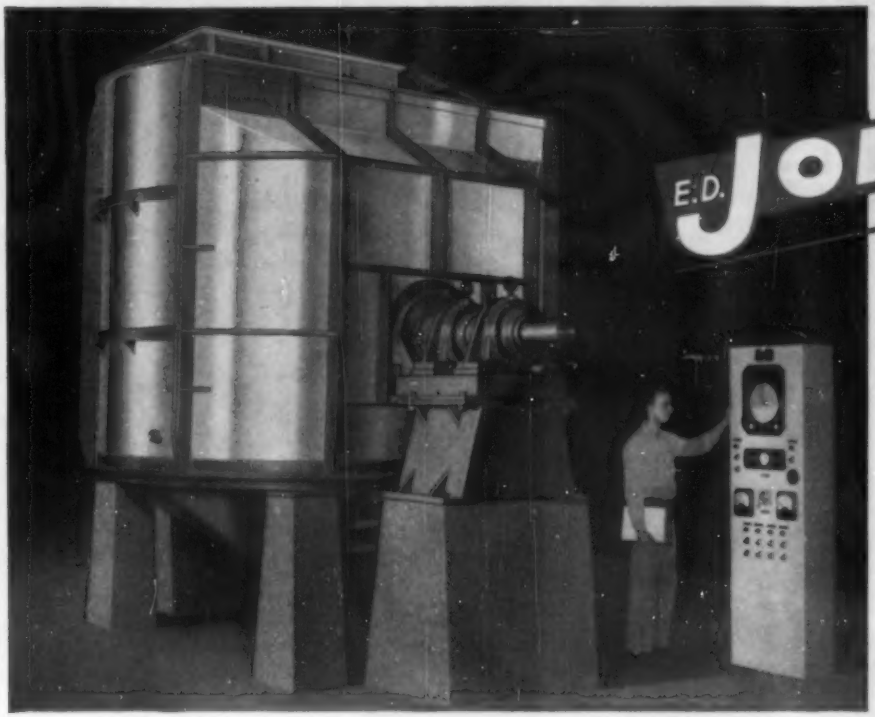
KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

"First in Quality . . . First in Service"

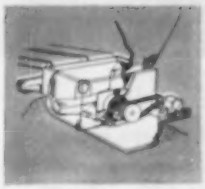
F. C. HUYCK & SONS, RENSSELAER, N. Y.

Defibers difficult wet-strength broke in less time, with less HP HRS/Ton...



The unique feature of this new Jones HI-LO Pulper — individual rotors for circulating and defibering — produces complete defibering, without cutting, in minimum time and with most economical application of power . . . results impossible to achieve with a single-rotor pulper.

HI-LO Pulpers already in mill operation have produced results like those mentioned above. Ask your Jones representative for details or write us direct for Bulletin No. EDJ-1063.



BROKEMASTER: *a further development of the HI-LO principle, introduces Hi-Speed and Lo-Speed Rotors in a custom-built under-the-machine set-up for pulping broke, with completely automatic controls, requiring no operating manpower.*

E. D. Jones & Sons Company
Pittsfield, Massachusetts
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

Jones

In Canada:
The Alexander Fleck, Ltd., Ottawa

Keep gears running smoother, longer...

LUBRICATE enclosed reduction gears and bearings with *Texaco Meropa Lubricant* – they'll stay in service longer, run smoother and quieter than ever. That's because *Meropa's* outstanding EP qualities remain effective for extra long periods under the most severe operating conditions.

Texaco Meropa Lubricant does not foam, shows extraordinary resistance to oxidation and thickening. It is noncorrosive to bearing metals and does not separate in use, storage or centrifuging. Nor do moisture or high operating temperatures hinder its effectiveness in checking wear, prolonging gear life.

The resulting high efficiency and low maintenance costs have made *Texaco Meropa Lubricant* the choice of paper mill operators everywhere.

Let a Texaco Lubrication Engineer help you produce more paper at lower unit cost. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

☆ ☆ ☆

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FOR THE PAPER INDUSTRY

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REMEMBER THESE DATES

JAN. 25-27: Canadian Pulp & Paper Assn., Montreal, Que., Canada.

FEB. 19-24: Paper Week in New York City.

FEB. 19-24: Annual Meeting American Paper and Pulp Assn., Waldorf-Astoria, New York, N. Y.

FEB. 20-23: Technical Assn. of Pulp and Paper Industry Annual Meeting, Hotel Commodore, New York, N. Y.

MAY 7-9: Coating Conference, Benjamin Franklin Hotel, Philadelphia, Pa.

PAPER TRADE JOURNAL

Published Weekly Since 1872

December 19, 1955, *Vol. 139, No. 51*

TRENDS 25

NEWS BRIEFS
- May Be New Pulp Mill in Southwest 29
- Minnesota Mining Buys Indiana Mill 29
- Sonoco and Kress Box Plan Mill 30

PAPER PEOPLE 31

FEATURE ARTICLES

Bold Design in Halifax's Plant Improvements 38
Inventive engineering produced a pulp washing room with low overhead and a pumping station without valves.

Insulation Board Manufacture and Economics 42
A penetrating market research job that reveals all the dominant trends in this segment of our industry.

Grooved Table Roll Performance at Crossett 48
A case history of Crossett's experiments with grooved rolls on a light-weight paper machine.

NEWS OF ASSOCIATIONS 52

NEW EQUIPMENT AND SUPPLIES 56

NEW LITERATURE 60

OBITUARIES 61

PRICES OF FIBERS AND MATERIALS 62

NEWS OF SUPPLIERS 63

FIGURES OF THE WEEK 64

CLASSIFIED ADVERTISING 68

ADVERTISERS INDEX 74

LOCKWOOD TRADE JOURNAL CO., INC., 15 W. Forty-Seventh St., N.Y. 36
Phone Plaza 7-2370

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High-Brightness DICALITE Lets you S-T-R-E-T-C-H Pigment and Fibers

It's the continuing experience of many paper mills that both fibers and pigment "go farther" when high-brightness Dicalite paperaids are added to the furnish. Because Dicalite paperaids have the highest brightness of any natural diatomite applicable for papermaking (average brightness 74 or better on the G.E. scale) they extend the value of more expensive pigments such as TiO_2. Because of the unique diatom structure of Dicalite paperaids, they help to prevent "clumping" of the fibers, thus leading to a smoother, more uniform sheet. Taken together, these properties of Dicalite paperaids help to make a whiter, brighter, more opaque sheet of paper . . . with a saving of fiber and pigment! And, in addition, you get all the other advantages of Dicalite paperaids—less pitch, wax or asphalt troubles, better drainage on the wires, faster drying, increased machine speeds.

Time-Saving Bonus

Dicalite BP-5 is packed in bleached white sulphate bags, with a minimum of printing in water-soluble ink. Just slash the bag two or three times and throw the whole thing in the beater—saves time, trouble, mess and clean up.

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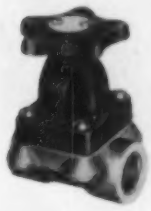
Los Angeles 17, California

Now WALWORTH PVC VALVES and FITTINGS give you the greater protection and longer service of all-plastic piping systems!

The new Walworth plastic Valves and Fittings are made of rigid polyvinyl chloride which is non-aging, non-corrosive and non-toxic and has extremely low flammability and high resistance to chemical attack. Walworth PVC products are molded by General American Transportation Corporation. Each product bears the stamp of Walworth's long established engineering skill and reliability — your assurance of safe, trouble-free valves and pipe fittings.

Walworth PVC Y-Globe Valves are designed to regulate the flow of alkalis, acids, inorganic salt solutions and other troublesome fluids commonly found in food, chemical and allied industries. They will give exceptional service at temperatures as high as 150°F and are designed for use with schedule 80 pipe. Other features of these valves include: (1) Three chevron, Teflon packing rings give you a leak-proof seal without binding the stem. (2) No useless threads to accumulate troublesome dirt because no stem threads enter the interior of the body. (3) Snap-on spherical plug with ball-to-cone seating arrangement to assure a tight line-contact seal between disc and seat regardless of any minor inaccuracies in alignment. (4) Full 45° angle of stem with center line of pipe to reduce pressure drop and turbulence. (5) Generously designed flow passage at the valve seat for a more even flow. (6) Back seat design allows repacking when wide open under pressure. (7) Polyethylene bonnet gasket to assure a perfect body-to-bonnet seal.



Walworth PVC Diaphragm Valves come equipped with neoprene discs. Other diaphragms especially suited to your application can be furnished. "R-2" rubber diaphragms are commonly used in systems handling dilute acids and alkalis. "J-1" Teflon diaphragms are recommended for maximum chemical resistance.

Valve design features: (1) No stuffing box or packing to replace. (2) A resilient diaphragm connected to the compressor by a stud assures a leakproof closure on the body weir or valve seat even when slurries or semi-solids are in the line. Diaphragm easily replaced without removing the valve from the line. (3) Streamlined flow area in valve body makes valve self cleaning and allows fluids to flow equally well in either direction. (4) Separation of valve body from the sealed metal bonnet protects fluids from contamination. Fluids contact only the valve body and diaphragm. (5) Completely enclosed metal bonnet protects stem from breakage and distortion.

Walworth PVC Fittings assure uniform thermal expansion of pipe and fitting threads when used on plastic pipe. They eliminate the danger of jammed threads, loose joints and the chance of galvanic corrosion. These screwed pipe fittings are: (1) Designed for use on schedule 80 of plastic pipe. (2) Walls are of uniform thickness accurately molded. Proportions are skillfully worked out in all sizes and types of fittings. (3) Fittings are chamfered to protect the thread and afford easy entrance of the pipe. Long bands provide reinforcement at the points of severest strain.

This booklet contains all the details about Walworth PVC products that you'll want to know. It describes mechanical and thermal properties, working pressures, sizes and dimensions, application and assembly data. For your free copy write to us. Please use company letterhead.

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How Lee Paper Company uses to guard the quality of its

HERE a pulper is being charged with wet stock from a stock car which is constructed of Stainless Steel.

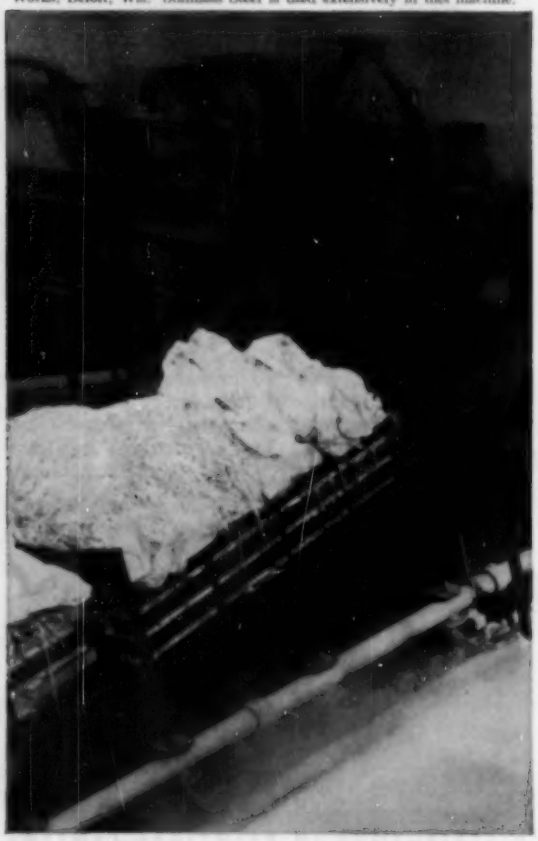
INTERIOR of a Jones No. 2 Pulpmaster shows the Stainless Steel rotor blades. The Pulpmaster was manufactured by E. D. Jones and Sons Company, Pittsfield, Mass.

• Manufacturing a wide variety of fine writing, printing and technical papers—including blueprint, photobase and similar papers—Lee Paper Company takes every precaution against chemical contamination in its mill at Vicksburg, Mich. As a result, as in so many other mills, Stainless Steel has taken over the trouble spots.

The beaters, where practically all the essential materials of papermaking are brought together and conditioned, have blades of Stainless Steel. Size tanks are Stainless, and the heating coil of the alum cooker is now of the same long-lasting material. When another metal was used in the latter application, coils had to be changed three times a year. The first Stainless Steel to be used here has been in service more than six months and remains in good condition.

Stainless Steel is used extensively on the new No. 3 paper machine. At the wet end, screens, inlet valve assemblies, breast roll doctor back and deflector, suction

WET END of the No. 3 Beloit fourdrinier, manufactured by Beloit Iron Works, Beloit, Wis. Stainless Steel is used extensively in this machine.



STAINLESS STEEL
fine commercial and technical papers

boxes, and white water trays and pans are Stainless. The fourdrinier beams and cross ties, wire stretcher cross shaft and the suction box oscillator cross shaft are covered with Stainless. Because of production of photo-base paper, the first roll on each dryer section is also fabricated from this quality-protecting material.

In addition to freedom from contamination and ease of cleaning, Stainless Steel gives maintenance savings that make its use desirable wherever practical from an initial cost standpoint.

It will pay you to follow the lead of most of America's leading paper mills and put Stainless Steel to work wherever you need its unique combination of advantages. If you're already using Stainless Steel, take another look at your operations to see if further use can't reduce your costs even more.

And for finest performance from Stainless Steel, be sure your equipment fabricator uses perfected, service-tested USS Stainless Steel. It is available in the widest range of shapes, grades, sizes and finishes.

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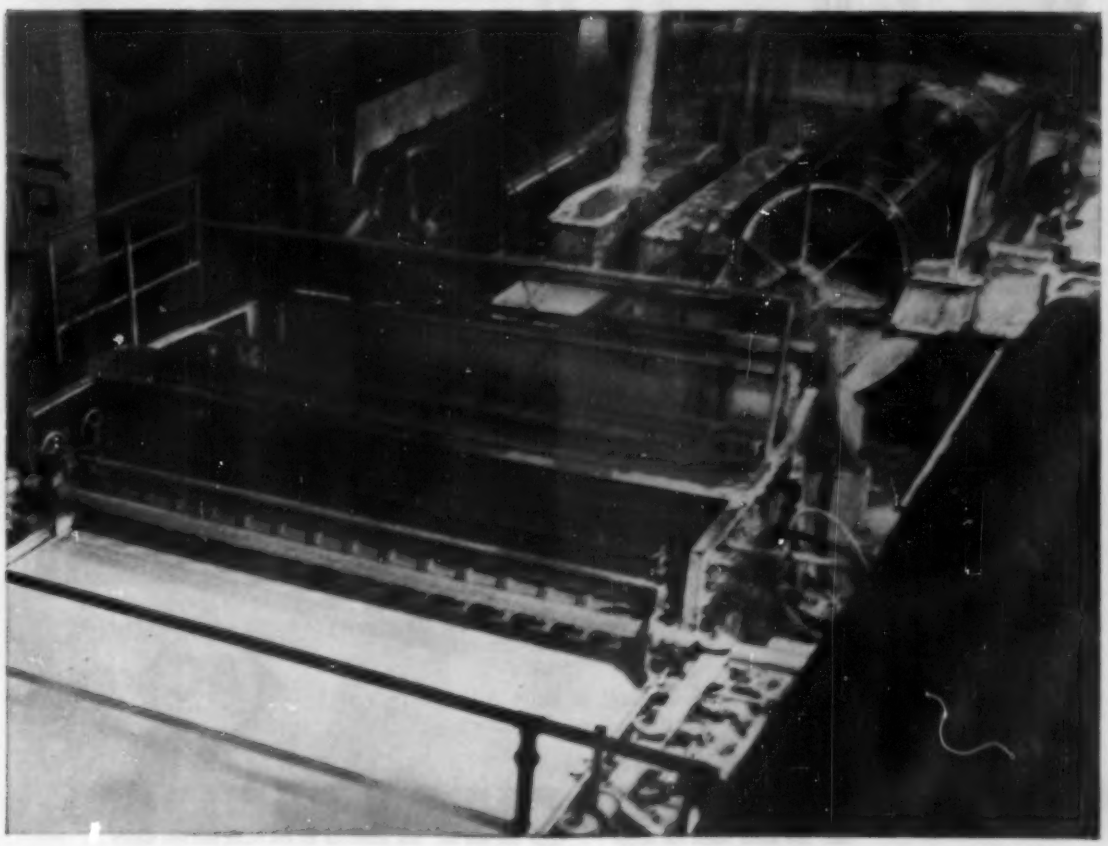
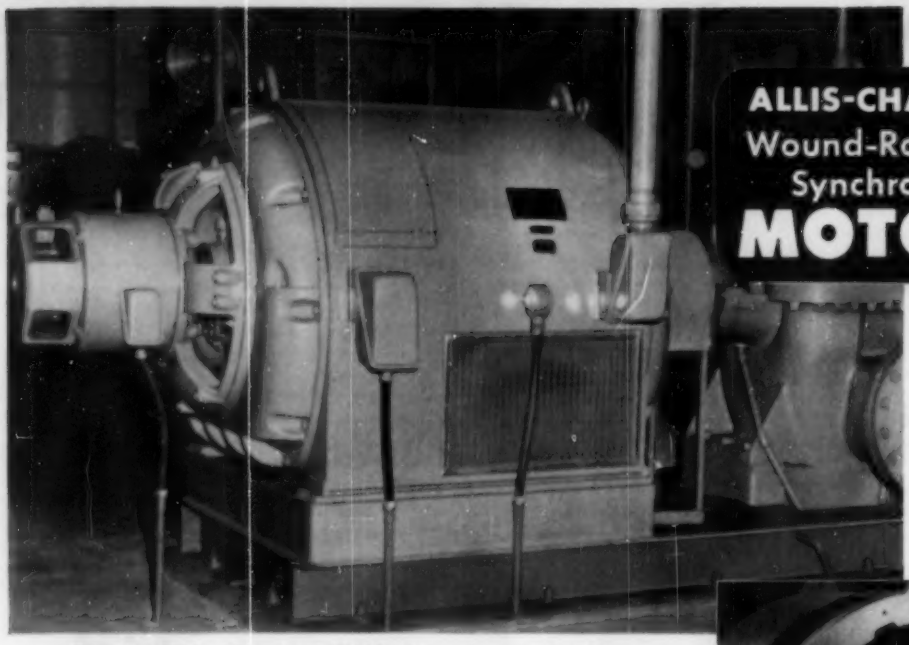




ALLIS-CHALMERS
Wound-Rotor and Synchronous
MOTORS

Shown is a 400-hp, 900-rpm end-shield bearing synchronous motor. Other Allis-Chalmers motors of this design are available from 250 hp at 300 rpm and up, in drip-proof and splash-proof construction.

Now full protection without loss of accessibility

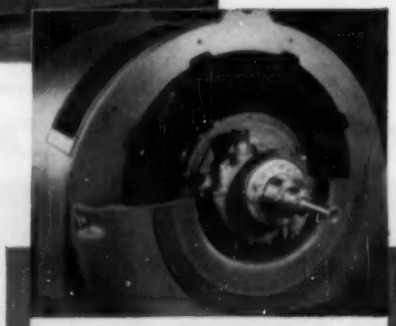
All parts, including slip rings and leads, are enclosed — yet removable inspection covers and end-shield sections simplify maintenance.

These motors combine modern functional design with maximum protection and accessibility.

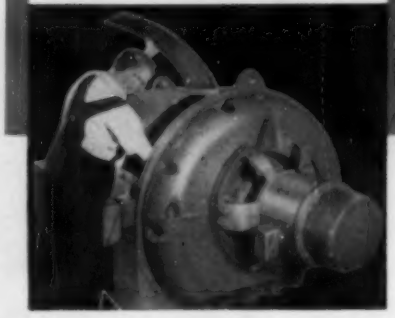
Here are some of the important features:

- Collectors and brushes are protected by box-type stator yoke from physical damage, dripping moisture, dust and dirt.
- Cast end shields provide rigid bearing support and full protection for motor windings.
- Slip-ring leads are brought out to a terminal box — they are not left exposed.
- Capsule-type sleeve bearings permit inspection or cleaning of motor windings without exposing interior of bearing to dirt.
- Access covers are secured by easy-operating, self-locking fasteners for ready removal.

Get details — Call your nearby A-C office, or write Allis-Chalmers, Power Equipment Division, Milwaukee 1, Wisconsin. Ask for Bulletin 05R8183.



Note accessibility offered by generous size opening covers. Upper half of end shield is removable for entrance to motor winding.



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and South...

Starkville, Miss.

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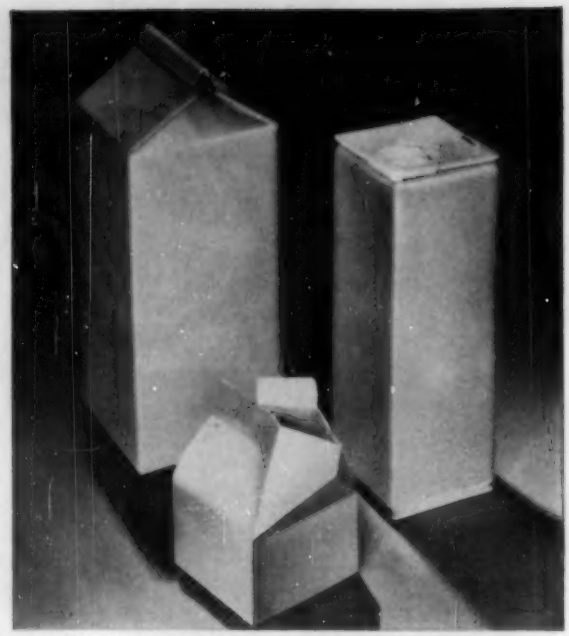

MILK CARTONS—Pexol® fortified size is the choice of many mills where a high degree of uniform sizing is required.

Whether you require fortified size or unfortified, pale or dark, paste or dry, there's a grade of Hercules rosin size to meet your sizing requirements at the lowest cost per ton of paper product.

This wide selection of sizing agents to meet the needs of the paper industry is only one good reason why so many mills rely on Hercules for all of their sizing requirements. Hercules' extensive research and service facilities are other typical Hercules "plus points". More than 40 years of service experience is at your disposal. The Hercules technical staff can help you meet your sizing specifications efficiently and economically; and Hercules' network of plants and storage facilities, strategically located from coast-to-coast, is your assurance of a dependable source of supply.

Your Hercules technical sales representative will be glad to discuss your sizing needs with you.

. . . **OR MULTI-WALL BAGS**—Hercules unfortified sizes are used in many unbleached Kraft papers for the best combination of sizing efficiency and economy.

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PPSS-8

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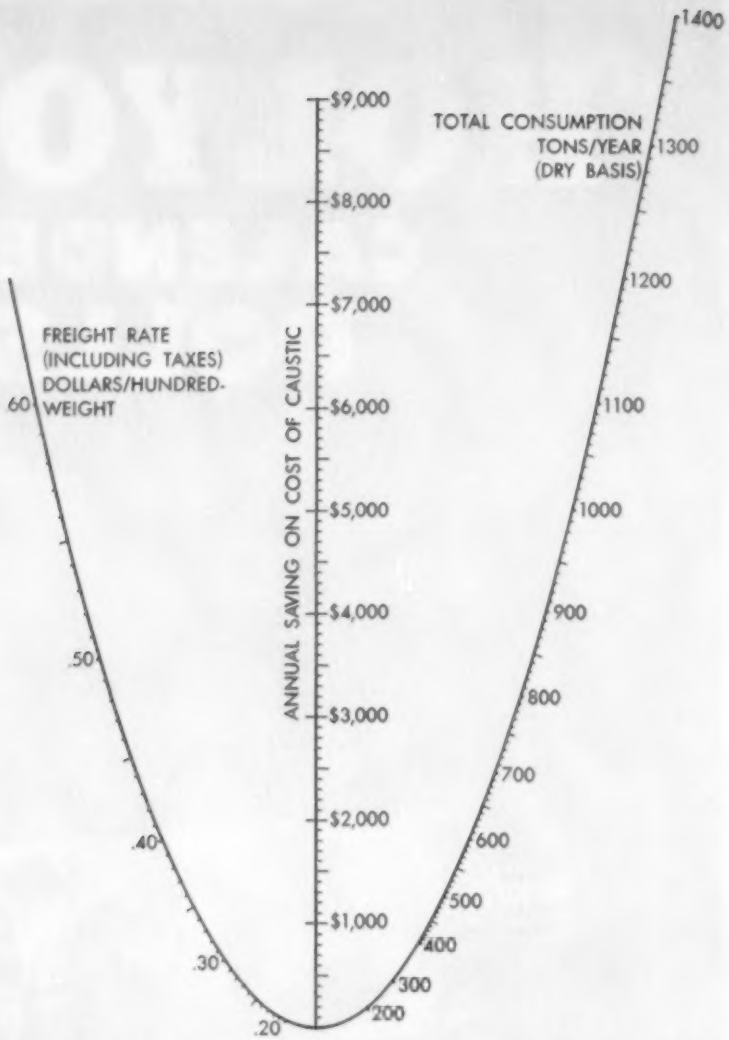

Which saves you more...

50% or 73% Caustic Soda?

This nomograph can help you decide Are you using the caustic solution that's least expensive for you? A few seconds' calculation with this nomograph will help you decide.

How to find if you can save on 73% caustic soda Simply draw a line from your freight rate (including taxes) to your annual consumption in tons on a dry basis. Your approximate savings will appear where this line intersects the center line of the nomograph.

This figure represents your savings on freight charges after the $2.00 premium price on 73% caustic soda has been deducted.

From this figure you must deduct a depreciation charge based on the cost of dilution equipment. Your Hooker technical service man is ready to advise you on the equipment needed and its cost.

Double-check your findings this way Before you make a final decision on 50% or 73%, give yourself the advantage of expert technical advice. Let your Hooker technical service man show you what equipment you will need for 73%. He will figure your exact savings—based on a realistic study of your operations.

For quick service, write or phone the nearest Hooker office.

"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we'll be glad to send you free. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write us for a copy.

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better ways to meet today's packaging needs

National Completes a SECOND VINYL RESIN PLANT

Vinyl resins are setting new standards of performance in many industries. In answer to fast growing acceptance, National has just completed its second vinyl resin plant at Meredosia, Illinois. The new plant will supplement the production of National's Plainfield, N. J., plant and offer faster service with added convenience to customers in the Midwest.

HIGH PIGMENT BINDING POWER OFFERED BY RESYN 12K-03

An internally plasticized, permanently flexible polyvinyl acetate copolymer latex—National's Resyn 12K-03—offers high solids pigment sizes at water thin viscosity.

Resyn 12K-03 improves calenderability, gloss and water-resistance at low binder ratios. Its inherent grease-resistance promotes gloss ink holdout.

Supplied at approximately 42% solids in submicroscopic dispersion, Resyn 12K-03 has excellent stability to high shear agitation.

NU-FILM T USEFUL IN GREASEPROOFING GLASSINE

One of National's specialty starches, Nu-Film T can be used to improve grease resistance of glassine at the size press. Low concentrations are effective.

Nu-Film T is the sodium salt of a chemically modified starch containing carboxylic and sulfonic acid groups. The presence of hydrophillic groups in the molecular structure greatly enhances the greaseproofness of a variety of glassine grades.

SIZE PRESS VERSATILITY WITH FIBERSIZE 85

Tailored Properties Permit Range of Application from Sizing to Coating

Fibersize 85, the latest addition to National's family of oxidized starches, pinpoints starch uniformity for size press applications. Physical and chemical properties are tailored to narrow limits during conversion to meet the requirements of the size press. The result? Stability, clarity, film forming and pigment suspending and binding powers are always the same. Viscosity can be duplicated repeatedly. A wide range of formulations *from starch sizing to offset coatings* can be applied with unusual ease and improved properties.

In starch sizing, the exceptional clarity, stability and filming characteristics of Fibersize 85 combine to give a smooth, evenly sized sheet. Almost all of the original brightness of the sheet is retained, as shown on the graph below.

As the binder in size press coatings, Fibersize 85 with its strong pigment suspending power helps produce coated sheets remarkably free of patterning. Pick strengths are high, as illustrated below, and operating difficulties are minimized.

Or, depending on the requirements of the job at hand, one of National's other specialties may prove best for your needs:

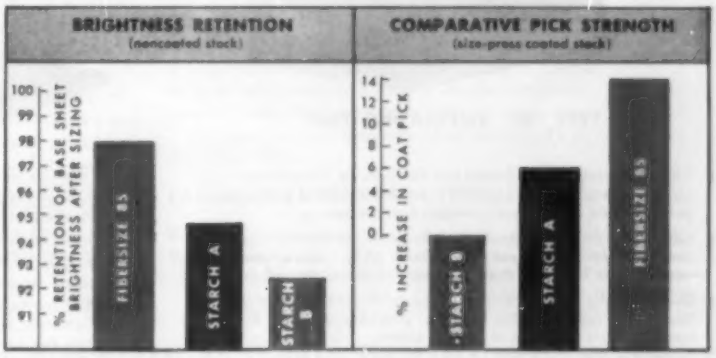
FIBERSIZE—a lower viscosity version of Fibersize 85.

NALEX 50—a moderately converted starch for pigmenting or sizing at very low solids.

NADEX 350—a dextrin of excellent quality for high solids sizing.

#16 STARCH—a premium quality buffered pearl with closely controlled pH for enzyme conversion.

If you'd like to evaluate any or all of these size press starches, contact your nearest National office. Our Starch technologists will be happy to work with you.



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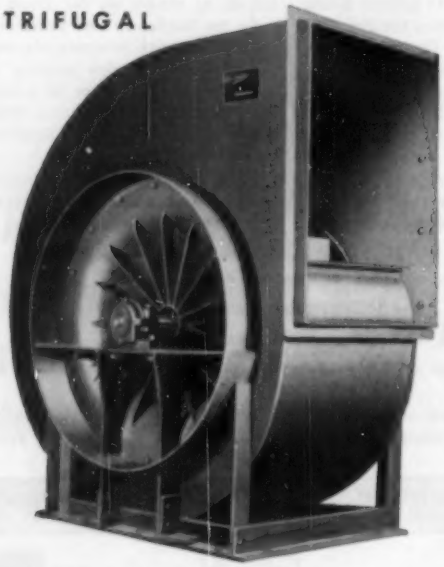
"BUT WHAT'S THE BEST TYPE OF "Buffalo" FAN FOR MY AIR JOB?"

Small wonder the gentleman asks this question! "Buffalo" builds centrifugal, axial flow, mixed-flow and heavy-duty package type propeller fans — all "best" fans for specific jobs and conditions. Below is a comparison of two types, our "BL" Limit-Load Ventilating Fan and Design "53" Belt-Air or heavy-duty "NV". A talk with your nearby "Buffalo" factory-trained engineer will further clarify any question on selecting the fan to give you "no-regrets" service. Call him in today!

CENTRIFUGAL



TYPE "BL" VENTILATING FAN

- The most frequently chosen fan for systems (ventilation and air conditioning) — cannot be overloaded, and gives stable performance over a wide range of pressures.
- Efficient even under unfavorable duct conditions (such as nearby elbows) because of its inlet guide vanes, smoothly curved inlet bell and matching curved rotor shroud.
- Exceptionally quiet, efficient all-around performance due to backward curved rotor blades, properly shaped housing scroll as well as features named above.
- "Buffalo" "Q" Factor* designed into it.
- Capacities from 1000 to 500,000 cfm. Write for Bulletin F-102 for all details.

PROPELLER

DESIGN "53" PACKAGE

- For free-air delivery, or against pressures up to 1".
- Easy, low-cost installation in square wall openings — a complete, ready-to-mount package.
- Package units also available for floor mounting.
- Unusually efficient due to shape of die-stamped blades.
- Certified capacity ratings up to 250,000 cfm.
- Models for high temperature and/or corrosive fume exhaust applications; also non-sparking.
- Highly flexible in application — large sizes for general ventilation; smaller sizes for specific areas and conditions.
- "Buffalo" "Q" Factor* makes it a top fan value! Write for Bulletin 415.

** The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

BUFFALO FORGE COMPANY

139 MORTIMER ST. BUFFALO, N. Y.

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

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Sales Representatives in all Principal Cities

"Buffalo"

INDUSTRIAL EXHAUSTERS BELTED VENT SETS PROPELLER FANS "E" BLOWERS-EXHAUSTERS

Want extra accuracy extra long life too?

The combination of correct metal formula and proper depth of chill assures maximum service life.

SPECIFY FARREL® ROLLS

In a century of experience, Farrel-Birmingham has developed the specialized skill and equipment necessary to give you rolls that feature a bonus combination of *extra* accuracy and *extra* long life.

Greater roll-grinding accuracy than has ever been possible with any other machine is achieved on the Farrel swing-rest grinder. Rolls are given a high finish, and an automatic crowning device unerringly produces the correct shape and degree of crown. Accuracy is checked with the exclusive Farrel roll caliper, capable of measuring variation down to .0001".

The extra long-life of a Farrel roll starts in the casting pit, where rolls are cast so true they require a minimum of turning and grinding to finish to size. This casting accuracy is responsible for the full depth of hard chilled section being retained nearly as cast—an assurance of long roll serviceability.

For further information, send for a copy of Bulletin 116.

FARREL-BIRMINGHAM COMPANY, INC.
ANSONIA, CONNECTICUT

Plants: Ansonia and Derby, Conn., Buffalo and Rochester, N. Y.
Sales Offices: Ansonia, Buffalo, New York, Akron, Pittsburgh, Chicago, Fayetteville (N.C.), Los Angeles, Houston

MORE CALENDERS ARE EQUIPPED WITH FARREL ROLLS THAN ALL OTHER MAKES COMBINED!

FARREL PAPER MILL MACHINERY

ROLLS: Chilled Iron • Dry Sand • Meehanite • Alloy Iron • Steel • Chromium-Plated
TYPES OF ROLLS: Calender Stack • Board Calender • Super Calender • Glassine Calender • Friction • Breaker • Smoothing • Coating • Creping • Paraffining & Waxing • Saturating • Silicating • Miscellaneous Special Purpose
CALENDERS: Paper and Board
GRINDING MACHINES: Roll
CALIPERS: Roll
GEARS, CUT: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
SPEED REDUCING GEAR UNITS • SPEED INCREASING GEAR UNITS • FLEXIBLE COUPLINGS

Farrel-Birmingham®

FB. 1046

STRUCTURAL STABILITY—
Low-cost carbon steel backing provides necessary strength and rigidity.
DESIGN FREEDOM—
Integral bond allows design and fabrication of shapes to meet process and space needs.
ECONOMY—
High-alloy layer assures corrosion resistance, long equipment life.

Stainless-clad steel in this head box eliminates costly hand scraping, cuts maintenance and down time costs.

CLAD STEEL EQUIPMENT GIVES SOLID HIGH-ALLOY PROTECTION AT LOWER COST

When corrosion or product contamination is a problem, or replacement, down time and cleaning costs excessive, clad steel equipment is often the *economical* answer. Cladding and backing are permanently and integrally bonded. Seepage cannot get between to cause spot corrosion or blistering. Clad's smooth, uniform surfaces retard scale and slime build-up, are easier to clean. If processing changes are desired, modifications can be readily made without injuring the clad surface or bond.

Why pay a premium for solid high-alloys in new pulp and paper processing equipment? Lukens Clad Steels—stainless, nickel, Inconel, Monel, copper—give you the same advantages with savings up to 50% in material costs.

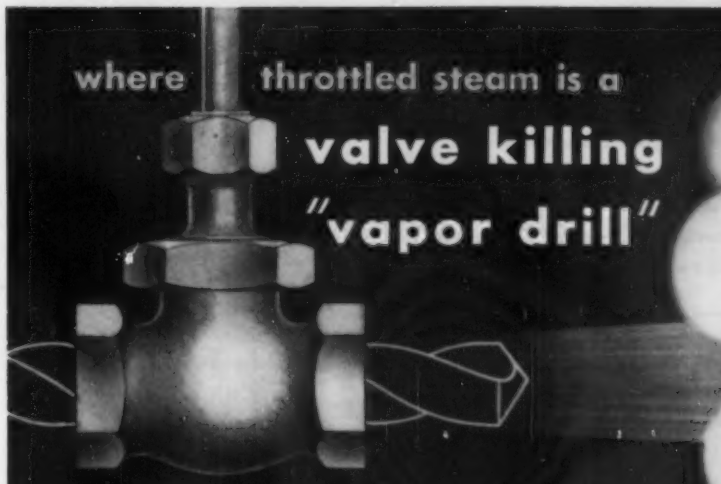
When you're considering new digesters, head boxes, beater tubs or other equipment, *qualified* equipment builders can help you from the earliest planning stages. Working with your engineers and consultants, they give you low first cost, dependable equipment that suits your particular needs. We offer the widest range of clad steels available and work closely with fabricators to help select the type most suited to your processing needs. If you would like further information, ask one of your builders or write Manager, Marketing Service, Lukens Steel Company, 753 Lukens Building, Coatesville, Pennsylvania.

LUKENS CLAD STEELS

STAINLESS-CLAD · NICKEL-CLAD · INCONEL-CLAD · MONEL-CLAD

PRODUCER OF THE WIDEST RANGE OF TYPES AND SIZES OF CLAD STEEL PLATES AND HEADS AVAILABLE

where throttled steam is a valve killing "vapor drill"



JENKINS PLUG TYPE VALVES
with the
500 BRINELL
STAINLESS STEEL
ARMOR SEAT
will lower costs

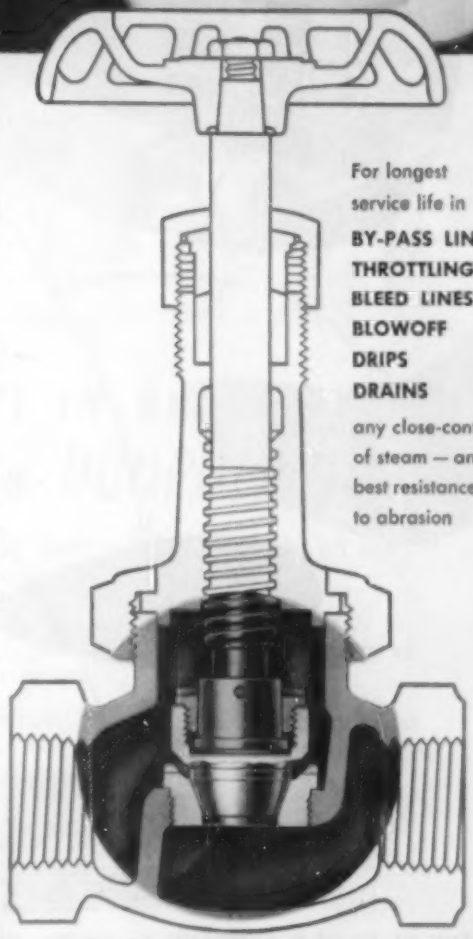
Closely regulated steam erodes grooves in seating units and drastically cuts service life of ordinary valves.

Jenkins Plug Type Valves have been engineered in every detail for maximum wear in such valve-killing service. The stainless steel Armor Seat defies the "vapor drill", and Jenkins quality throughout gives them top rating for wear-proof and trouble-proof perfomance.

Make you own test . . . in your toughest steam service . . . or anywhere that abrasion or erosion causes frequent valve failure. Compare, part for part, with any similar valve. You'll find that, again, Jenkins *extra value* pays off in longer life and lower maintenance cost.

Plug and seat ring are Jenkins JX500, a Stainless chromium alloy steel made to Jenkins high strength specifications, heat-treated to 500 Brinell. Seating surfaces are super-hard and mirror-smooth, offer highest resistance to galling, cutting, abrasion, and erosion. Wide, steep, 30° total taper permits extremely close regulation of flow and vapor-tight closure.

The Stainless steel plug is securely fastened to the spindle with a bronze locknut. Spindle is aluminum bronze with a tensile strength exceeding 70,000 lbs., — has high corrosion resistance.



For longest service life in
BY-PASS LINES
THROTTLING
BLEED LINES
BLOWOFF
DRIPS
DRAINS
any close-control of steam — and for best resistance to abrasion

300 lb. 200 lb. 150 lb.
GLOBE and ANGLE

For complete information call your Jenkins Distributor — ask for Form 202. Or write: Jenkins Bros., 100 Park Ave., New York 17.

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JENKINS VALVES
LOOK FOR THE JENKINS DIAMOND
SINCE 1864

Still another installation by a leading producer demonstrates the advanced planning and efficiency of Frank W. Egan & Company design. This TREATER was chosen to produce Formica laminated sheets for decorative and industrial applications because it turns out the highest percentage of perfect material and treats the base stock *uniformly*. An Egan exclusive is the micrometer gauge for exact control and finest adjustment *while operating*.

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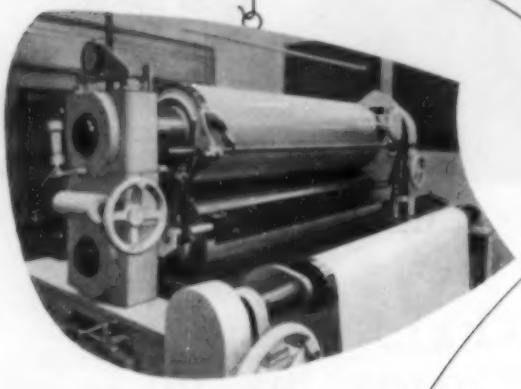

Treater

FOR LAMINATED PLASTICS INDUSTRY

Supplied to THE FORMICA COMPANY

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Designers and Builders of Machinery for the Paper Converting and Plastics Industries

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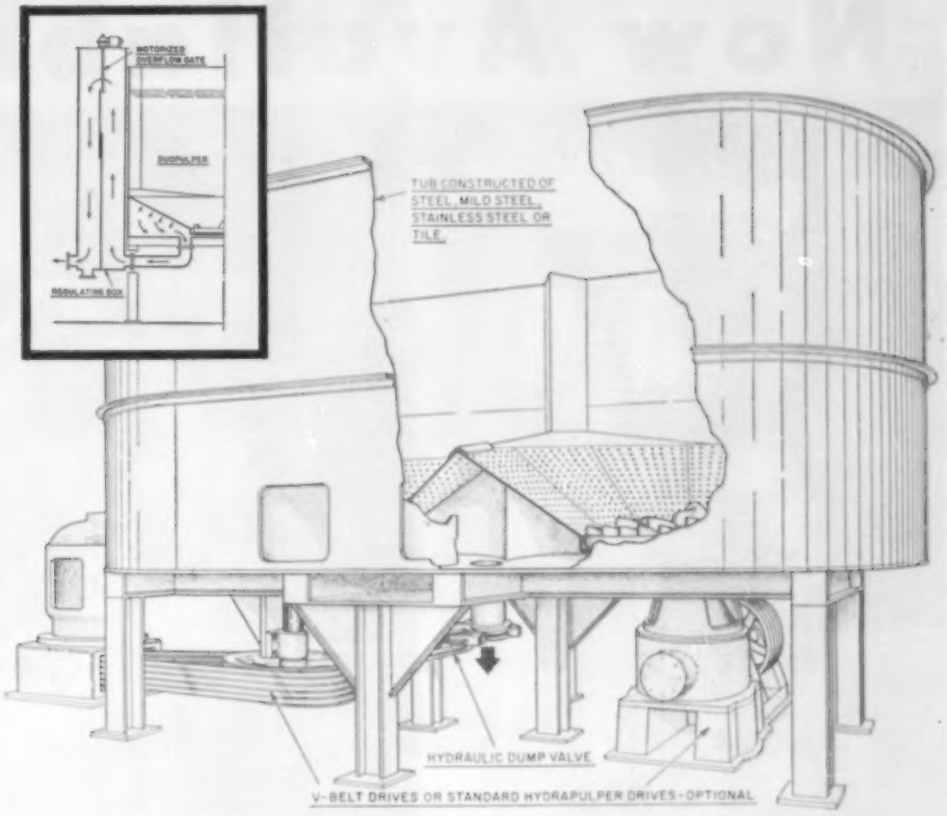
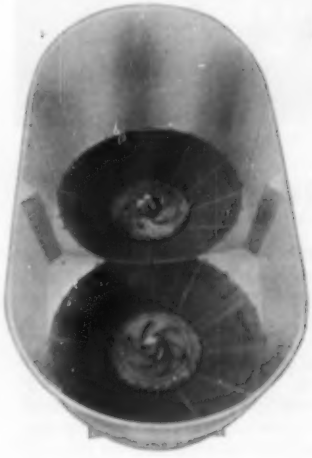

MOTORIZED OVERFLOW GATE
DUOPULPER
REGULATING BOX
TUB CONSTRUCTED OF STEEL, MILD STEEL, STAINLESS STEEL OR TILE
HYDRAULIC DUMP VALVE
V-BELT DRIVES OR STANDARD HYDRAPULPER DRIVES-OPTIONAL



NEW CONCEPT IN BROKE PULPING

...Shartle *DUOPULPER*

Designed to take full sheet width broke right off the machine or broke conveyors.

Two Hydrapulper® rotors in one low oblong tub. Generous extraction plates around outer periphery of each rotor for high capacity.

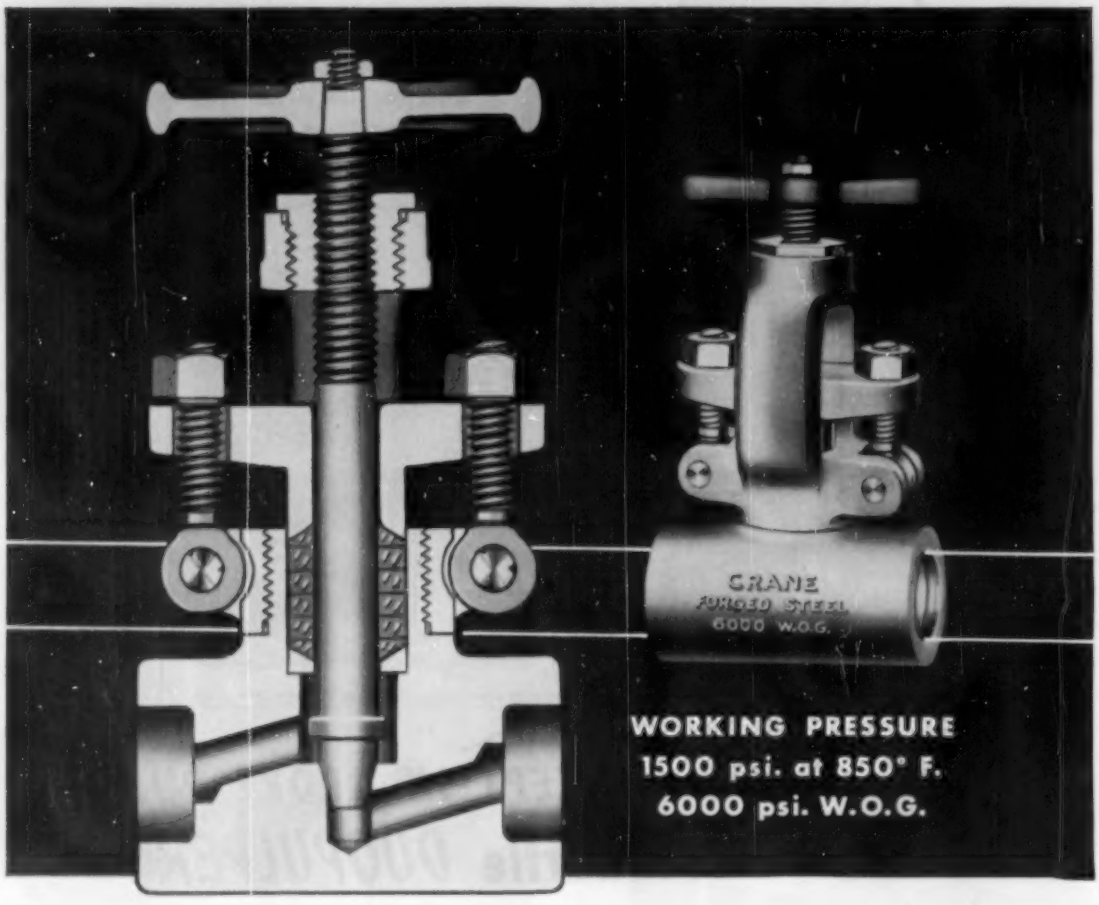
Requires very little head room . . . will fit under most machines. Equipped with regulating box with motorized control gate for automatic operation.

Available in several sizes.
Write or call Shartle Division for more information.

The BLACK-CLAWSON Company

SHARTLE DIVISION • MIDDLETOWN, OHIO

Now Available



New Crane Forged Steel Instrument Valves

Been looking for an exceptionally rugged, compact, and low-priced stop valve for your small hydraulic or high-pressure, high-temperature instrument lines?

Crane has developed it—sizes ¼", ⅜" and ½", in both screwed and socket-welded patterns. It's the all-new Crane Forged Steel Instrument Valve, and you can specify it now for immediate delivery.

Will Handle Many Services

Note closely the over-all design and construction shown above of this new Crane valve. Oversized stuffing box—heavy-duty Crane Exelloy stem with integral disc—bolted gland—swinging gland eye bolts—outside screw and yoke construction—all add up to the high performance and low maintenance you want in a valve for your instrument panels, orifice meters, bypass and gauge lines, regulator leads, and other hydraulic and high pressure/temperature lines.

Literature on Request

These rugged, low-cost stop valves are built for 1500 psi. at 850° and 6000 psi. W.O.G. Construction and materials are job-engineered by Crane experts—backed by a century of quality manufacturing, matchless experience. You'll want complete information on the all-new Crane Forged Steel Instrument Valves. Contact your Crane Representative, or write to Crane Co., General offices, Chicago 5, Illinois—Branches and Wholesalers serving all industrial areas.

CRANE CO.

VALVES • FITTINGS • PIPE
KITCHENS • PLUMBING • HEATING

CRANE'S FIRST CENTURY...1855-1955

A Puseyjones engineer calibrates a paper roll on the fast and accurate Gisholt Dynetric Balancing Machine.

Like every machine that Puseyjones builds, the new Fourdrinier now being built for Southland Paper Mills will be in dynamic balance . . . vibration-free at every speed. At the Puseyjones plant, every rotating part, large or small, is being checked out on this Gisholt Dynetric Balancing Machine . . . electronically balanced to the closest tolerances.

Speeds and tonnages go up, when vibration goes out. At Puseyjones, scientific, precision balancing takes out the growl, puts in the purr. In a matter of seconds, unbalance vibration is picked up, amplified, and recorded. Like a doctor reading an electrocardiogram, Puseyjones engineers read the electronic tracing, compute the amount of unbalance, and pinpoint its location. Armed with this data, adjustments to eliminate vibration are easy.

Precise balancing of rotating parts in every Puseyjones Machine is standard operating procedure . . . just one of many extra safeguards that are yours when you call on Puseyjones. Let us give you full details.

THE PUSEY AND JONES CORPORATION
Established 1848 : : Builders of Paper-Making Machinery

Fabricators and Welders of all classes of Steel and Alloy Products

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THE SIGN OF SUPERIOR QUALITY

Not Just CORROSION-RESISTANT

BUT CORROSION-PROOF

Corrosion resistance is not enough to stop acids or alkalies from chewing up a motor in a hurry. That is why the wise engineer selects Reliance Corrosion-Proof Motors for corrosive service.

These motors are built to withstand the onslaught of destructive chemicals for years. Housings are made of virtually indestructible cast iron. Exterior contours are designed to slough off liquids—no nooks and crannies to retain corrosive elements. Enclosures are sealed to prevent any leakage . . . Metermatic lubrication systems provide complete protection against burned out bearings and contaminated lubricants.

Anyway you look at them, Reliance Corrosion-Proof Motors can take it—and you're not limited in the choice of motors either. A complete line of a-c. motors, 1 thru 300 hp., is available in all mountings, frequencies and voltages.

Why not call your Reliance representative today and get all the details.

B-1505

RELIANCE Totally Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

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TRENDS

DECEMBER 19, 1955

Capital Outlays, Retail Sales To Set Records

Record Retail sales for the year are in the offing, as soaring Christmas business bolsters the end-of-the-year total. Forecasts of $185 billion in consumer purchases, up $15 billion from 1954, are common. Commerce Secretary Sinclair Weeks stated that the first six months of next year will see business volume go even higher, and that the second half looks "very good" too. Plant and equipment outlays scheduled for the first quarter of next year will be 12 per cent above the all-time high of this year.

First Quarter Pulp Changes

U.S. bleached sulphite prices for first quarter deliveries are up $5. The U.S. price will match Canadian levels at $150 for this grade. Canadian groundwood will sell at $90 per ton delivered in the Mid-West, and from $82.50 to $87.50 for Eastern delivery. U.S. western unbleached kraft was hiked $5 to $125. Scandinavians, unannounced at presstime, are getting higher prices for unbleached kraft in Europe, and may try for increases here.

Rail Freight Rises Closer

Rises in rail freight rates, reported in Paper Trade JOURNAL last month, seem a certainty in the near future as Southern carriers, originally opposed to the increase idea sponsored by Eastern lines, fell in line during the week. Eastern carriers favor a straight seven per cent increase, whereas Western lines are pushing for holddowns on certain commodities which limit the increase on specified items to a flat amount regardless of the overall percentage rise.

Pulp Exports Down, Inventories Up

U.S. overseas wood pulp shipments in October dipped to 38,946 tons from 44,104 in September, and 43,971 last year. As exports declined, wood pulp inventories increased. At the end of October inventories reached 158,780 tons, of which 89,201 tons were market supplies. Both pulp inventories and market stocks were up over September levels, the U.S. Pulp Producers Association announced.

Paper, Board Production At High Levels

The paper production ratio for November reached a monthly average of 98.9 per cent, a high topped only once before by the May ratio of 99.3. The paperboard operating ratio for the month of November was 101, which compares with 102 per cent of capacity for October.

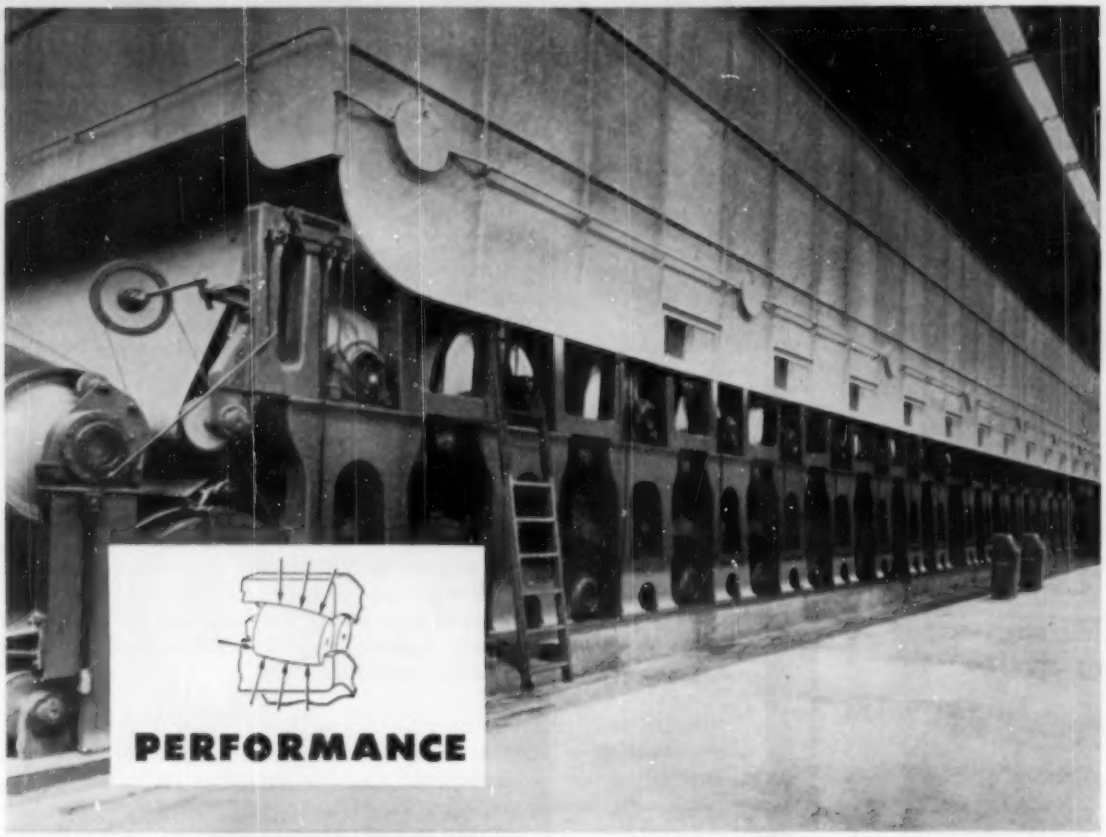
Shortages Stir U. S. Exports

The United Kingdom, world's third largest paper and board producer, currently experiencing a substantial paper shortage at home, will purchase more than 190,000 tons of wood pulp from the U.S. alone this year, a hefty 76 per cent increase from our 1954 export levels, and more than 500 per cent above tonnage totals for 1953.

Caustic Soda To Stay Tight

No easing in the tight Caustic Soda market is foreseen through January. The recent heavy increase in demand, first thought to be artificially created by earlier rising prices, is a real increase in domestic consumption, producers report.

IN THE PAPER INDUSTRY, TORRINGTON *Bearings are used in presses, driers, calenders, wet ends and winders.*



Photograph courtesy of The Bagley—Sewall Corp.

TORRINGTON Spherical Roller Bearings

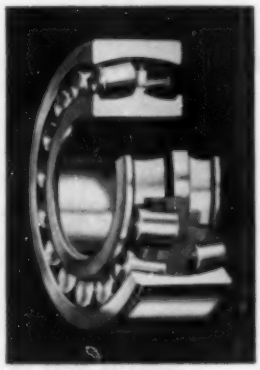
are manufactured with accurate geometrical conformity between races and rollers for ultimate capacity and performance

Because conformity factors are uniformly high, rollers can operate with a minimum of friction and carry greater loads for a longer time.

There are other good reasons why TORRINGTON SPHERICAL ROLLER BEARINGS can guarantee superior performance. Races and rollers are precision ground to a high surface finish from the finest quality electric furnace steel available.

An integral center flange on the inner raceway gives positive radial and thrust stability against continuous high-speed, high-load conditions. Fully machined, cast-bronze, land-riding cages—one for each path of rollers—allow thorough lubrication, reduce wear and lengthen bearing life.

Specify dependable, rugged TORRINGTON SPHERICAL ROLLER BEARINGS in your equipment. They're available with either straight or tapered bore for shaft or adapter mounting.



THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.

District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON SPHERICAL ROLLER BEARINGS

Spherical Roller • Tapered Roller • Cylindrical Roller • Needle • Ball • Needle Rollers

FOR THE PULP AND PAPER INDUSTRY

. . . Trim that's highly resistant to black, white and green liquors

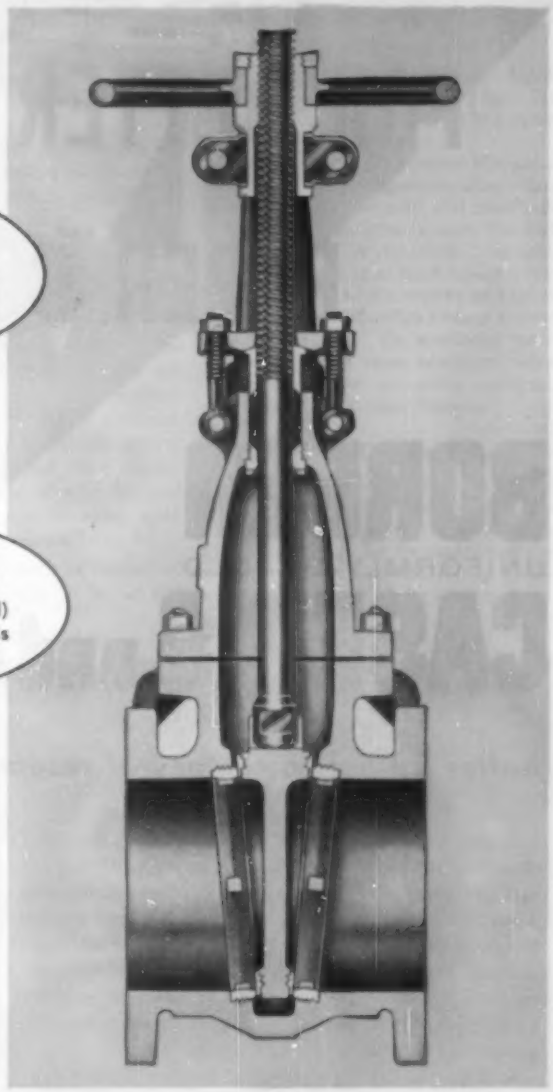
PACKING
Special for corrosive sulphite liquor service

STEM
- 18-8 Stainless Steel
- Nickel-Copper (Monel)
- 13% Chrome Stainless
- Nickel-Plated Steel

WEDGE
- 18-8 Stainless Facing
- Nickel-Copper (Monel)
- 13% Chrome Facing
- Higher Strength Iron

SEAT RINGS
- 18-8 Stainless Steel
- Nickel-Copper (Monel)
- 13% Chrome Stainless
- Higher Strength Iron

PRESSURE PARTS
Nickel-Alloyed Iron or Higher Strength Iron

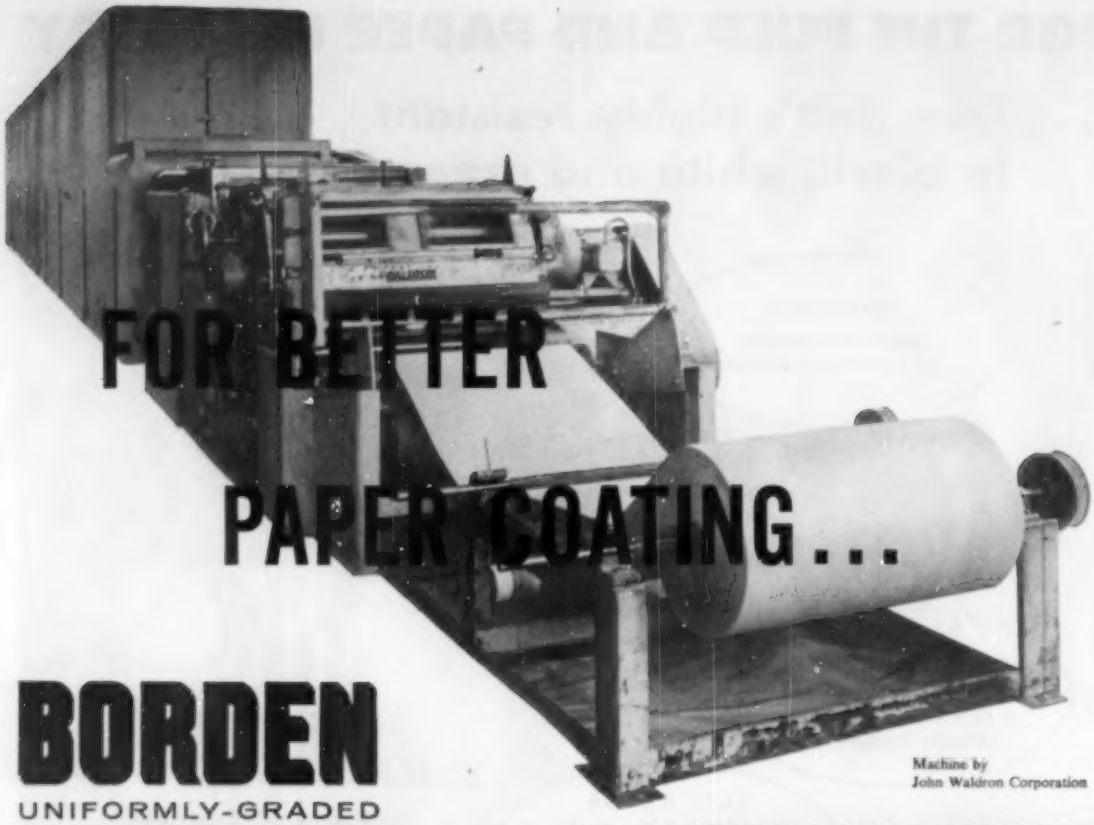


Your nearby OIC Valve distributor will advise you on trim best able to meet the corrosive conditions you have. These valves and the services for which they are intended are described in Bulletin No. 1000. Write for a free copy.

OIC
FOUNDED 1923

THE OHIO INJECTOR COMPANY • Wadsworth, Ohio

VALVES | **FORGED & CAST STEEL, LUBRICATED PLUG, BRONZE & IRON VALVES**



FOR BETTER PAPER COATING...

Machine by
John Waldron Corporation

BORDEN
UNIFORMLY-GRADED
CASEINS and CASEINATES

better by half a century of research and experience

You may have a production or quality problem in your plant that Borden's casein experts can solve. Borden has had fifty years of experience in the casein business, both domestic and import. During that time, Borden Research has developed many new casein modifications for paper coating. Work goes on continually to develop better products for the industry. This experience and research backs every pound of Borden's casein that you buy . . . insures top quality.

Raw casein is never a standard product. Borden tests and blends thousands of tons of domestic and imported casein yearly in order to obtain the uniformity required for quality paper coatings. This uniformity gives you better control . . . helps assure coated paper at its best.

Borden's research has also resulted in the development of modified caseins and caseinates for the paper industry. There are specialized caseins for use on paper lithographic plates, for high solids with low viscosities, for additional water resistance and for freedom from microscopic size "foam pits".

To find out more about Borden's casein products, write to The Borden Company, Chemical Division, Dept. PT-125, 350 Madison Ave., New York 17, N. Y.

CASEIN • PVA EMULSIONS

PAPER CHEMICALS

THE *Borden* COMPANY
CHEMICAL DIVISION

WEEK OF PAPER TRADE JOURNAL DECEMBER 19, 1955

Foresters See Real Hope For New Pulp Mill in the Southwest

Possibility of the locating of a pulp mill in the Arizona-New Mexico area was a principal topic of discussion at the opening day of the Southwestern Section of the Society of American Foresters, meeting December 2 in Albuquerque, N.M.

Most observers agreed that the projected mill most probably will become a reality.

Robert Seidl, a representative of the Forest Service Products Laboratory at Madison, Wis., told representatives of the national, state and Indian Service forest bureaus that the Southwest has a plentiful supply of timber for pulpwood.

"There's the wood," he said, "and there's a market; now if you find the water—and the money—you've got yourself a mill."

James Egan of the district office of the Forest Service, earlier gave a survey of the stocks available in national forests, Indian lands, private lands, etc. which might be converted into pulpwood, and mentioned other lands on which there have not yet been surveys to determine the material available.

Foresters are interested in the establishment of a plant in the region because, it would aid in the "full integrated utilization of forest products, greater net growth and better quality sawtimber, mistletoe, and other disease control, easier control of wild fire and possibly some increase in water yield due to reduced interception."

At the end of his survey, he concluded, "the southwest is going to be in the pulpwood business."

Building Starts on New Gulf States Mill

Erection of the first permanent building for the new Gulf States Paper Co. mill in Demopolis, Ala. is getting under way.

Jack W. Warner, executive vice-president, has told Demopolis residents that foundations for the pulp mill itself will be constructed early in January. The mill should be open by April, 1957, he said.

Mr. Warner told of his company's reason for coming to this section as part of his address on "Marengo County and Its Industrial Future." He mentioned transportation, freight rates, intelligent labor supply, favorable tax rates, adequate water supply and other reasons.

Forms New Container Firm

Marvin J. Herzig, formerly associated with the Arch-built Corrugated Co., has announced the opening of a plant in Ridgewood, N. J., for the manufacture of corrugated containers. Mr. Herzig will be secretary-treasurer of the new concern, the State Container Corp.

Hartford City Mill Bought by Minnesota Mining

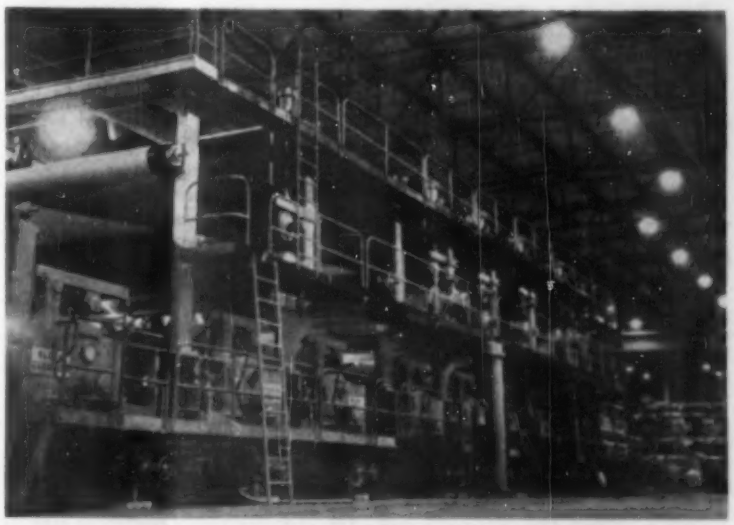
Minnesota Mining & Manufacturing Co., St. Paul, Minn., has purchased controlling interest in the capital stock of the Hartford City Paper Co. in Hartford City, Ind.

Officers of the two firms reported on December 8 in a joint statement that the Minnesota firm has acquired a substantial majority of the paper company's stock. Negotiations were conducted through Patterson Securities & Investment Co., Fort Wayne, Ind.

Herbert P. Buetow, president of Minnesota Mining, said the change in ownership will not affect personnel nor policies of the Indiana company.

"We plan to operate Hartford City Paper Co. as a subsidiary. The present management and operating policies will continue to guide the company Mr. Buetow said.

As the primary reason for the purchase, Mr. Buetow cited his firm's interest in obtaining an assured additional source of raw material for the office duplicating paper it makes.



WORLD'S WIDEST CYLINDER MACHINE is the claim for this new board machine at Potlatch Forests Inc., Lewiston, Idaho. A major installation in the firm's new pulp and paper mill, whose start-up was recently reported, the 220 inch wide machine was designed and built by Black-Clawson Co. . . . Features of the machine are a wet end comprised of 7 60-inch X220-inch molds mounted in vats equipped with built-in Hydronamic inlets and a self contained exhaust system. The press part has a 36 inch suction return drum press, four overhead primaries and three main presses. . . . The machine will produce 200 tons daily of folding box board.

Kress Box Joins Sonoco In Plans For New N.S.S.C. Mill

F. J. Kress Box Co., large Pittsburgh (Pa.) corrugated container maker, told the Pittsburgh *Post Gazette* last week that it is planning to build a pulp and board mill in the South which will furnish semi-chemical corrugating material requirements for its eastern operations.

The Kress company will undertake the project with Sonoco Product Co., Hartsville, S. C. A site has not yet been chosen, it is said.

The mill initially will produce 55,000 tons annually. Operations are expected to be under way by January 1, 1958.

Sidney Roofing Orders New Board Machine

Sidney Roofing and Paper Co., Ltd., Victoria, B.C., a leading Canadian board and roofing felt manufacturer, has ordered a new Black-Clawson board machine.

Designed to produce a variety of grades of paperboard, including chipboard, carton stock, bleached manila, patent coated, mechanical and chemical pulpboards, the machine will trim 120" and produce 60 tons per day at speeds up to 400 f.p.m. The new machine will be comprised of six vats, a suction return drum press, three primary presses and three main presses, two of which will be forward presses and one of which will be a reverse press. Black-Clawson crownless press rolls will be used on all main presses.

A unique dryer arrangement, combining both double deck horizontal dryers and vertical stack dryers, will be used. The stock dryer framing will be mounted on the basement floor level to provide for future dryer expansion by installation of new dryers on existing frames below the machine room floor level. By this means, the forty-two dryers with which the machine is presently to be provided, can be expanded to a total of seventy-eight dryers in the future, without disturbance or relocation of any of the equipment following the dryer section.

A seven roll calender stack and a nine roll calender stack are included, together with a Black-Clawson Autoflyte reel.

Sandwell & Co. Ltd., Vancouver, B.C., are the consulting engineers handling plans and arrangements for the expansion program.

Watervliet to Harvest Own Hardwood for Pulp

Watervliet Paper Co., Watervliet, Mich., which previously purchased all its wood supply, now plans to harvest some of its own pulpwood from nearby woodlots. Debarking equipment is now being set up at the site, and harvesting will begin about December 5.

John Hanson, former member of the Michigan state conservation department, has been named wood lot superintendent. Ultimate size of the hard wood harvesting cannot be estimated, but the total of employes will be increased to 400, a company spokesman said. The firm produces bond-quality paper.

Yale Organizes Third Forestry Seminar

Recently announced were the plans and program for Yale University's third seminar to be held at the Yale School of Forestry in New Haven, Conn. from January 23 through February 3. The subjects to be discussed are 1) forest inventories and stand structure studies, 2) business organizations in the forest products industries, 3) income taxes in relation to operating costs, 4) ad valorem taxes in relation to operating costs, 5) integration and research in the forest industries, 6) labor relations and collective bargaining, and 7) public relations in forestry.

It is expected that enrollees will have had a minimum of five years' experience. Tuition charge is $200 per person, to be paid on or before the date of registration.

Paper and Board Production

According to the American Paper and Pulp Association, the ratio of the United States production to mill capacity for the week ending December 3, 1955, was 98.7 percent, compared with 98.0 percent, revised, for the preceding week. The ratio was 95.5 percent for the corresponding week a year ago.

The paperboard production ratio for the week ending December 3, 1955, was 98 percent, compared with 95 percent for the preceding week, and 87 percent for the corresponding week last year.

(Detailed statistics on page 64.)

Cellu-Products Opens Plant in Arkansas

A new paper converting plant will be located in Little Rock, Ark. Operated by Cellu-Products, High Point, N. C., just incorporated in Arkansas, the plant will turn out impregnated and laminated wrapping papers for furniture and other articles.

Ray Bechard, the vice-president and district manager who announced location of the plant, has reported that the company will open several small plants in completing an expansion program.

The Little Rock plant will supply the material to users in Arkansas, Oklahoma, Mississippi and Texas.

Another plant is located in Lenore, N. C. Eventually one will be located on the West Coast, it is said.

Dairypak Plans Fourth Plant Near Cleveland

Plans for a $1 million milk and ice cream carton plant have been announced by Dairypak Inc. The plant will be the company's fourth and will be located in Olmsted Falls, Ohio, just west of Cleveland.

The company's crowded quarters in Cleveland forced the move, said President Clarke Marion. The plant has branches in Ft. Worth, Texas; Athens, Ga.; and Clinton, Iowa.

The Olmsted Falls plant will be headquarters for the entire operation.

White Polyethylene Coated Board Used in Carton For First Time

White polyethylene coated board, a new addition to the family of plastic-coated boxboards, is used in a carton for coffee ring, produced by Robert Gair Co., Inc.

The new coating is made of Bakelite polyethylene impregnated with particles of titanium and extruded on paperboard. This paperboard has a glossy white surface in addition to being grease- and moisture-resistant.

American Can Opens Plant

American Can Co. formally opened a $2 million addition to its plant in San Francisco, Calif., on November 28. The new building, three stories high and of concrete slab construction, adds 346,000 sq. ft. of floor area to the existing factory, increasing floor space by almost 75%.

The expanded plant will employ over 1,400 persons and be capable of producing 1.5 billion metal and fibre containers annually.

J. W. Daniels

Promoted to Supt. Of Gair's Conn. Box Plant

John W. Daniels has been promoted to superintendent of the Connecticut Corrugated Box Division at Portland, Conn., of Robert Gair Company, Inc. He succeeds Joseph M. Murphy who was recently appointed special production representative of Gair's Container Division.

Mr. Daniels started work at Gair's Thames River Division, Uncasville, Conn., in 1926. In 1940 when the company opened the new plant in Portland to handle its container operations in that area, he joined the maintenance department there. In 1943 he was promoted to foreman of that department, and in 1945 was appointed assistant superintendent of the plant. He is a resident of Portland.

Weyerhaeuser Realigns Research Department

Weyerhaeuser Timber Co.'s enlarged research and development facility at Longview, Wash. will be completed within a few weeks, and has been given a new name. Winton Patnode, Weyerhaeuser director of research, has announced the expanding building will be called *Technical Center—Longview*. The original structure was built in 1941, and has been known as the Development Center.

James R. Roberts, Technical Center manager, reports the following staff appointments.

Dr. A. S. Gregory, formerly assistant manager of the Development Center, to be manager, applied research. A Weyerhaeuser development staffer for ten years, Gregory will be in charge of long-range basic research in technological fields of vital importance to the company's continuing operations.

H. A. McKeever, formerly chief of the center's mechanical engineering section, to be manager, process development. A mechanical engineer with sawmill, planing mill, and new product pilot-plant design experience, McKeever will spearhead the commercial development of new, and improvement of existing, company processes.

E. M. Williston, former chief of the center's applied physics section, to be manager, product development. Williston is a graduate forester with advanced studies in mechanical engineering. He has specialized in developing fiber, bark, and wood-particle products. He will be responsible for the commercialization of of new products in the center.

A. S. Mark, former administrative section chief, to be office manager. An economics and business graduate of the University of Washington, Mark has been with Weyerhaeuser for nine years. His new duties include the supervision of the center's budgeting, accounting, purchasing, safety, and personnel administration.

Kelly Heads New St. Regis Sales Office

St. Regis Paper Co. has announced the opening of a multi-wall packaging division sales office in Little Rock, Ark. Bruce C. Kelly, previously sales representative and office manager in Birmingham, will head the new office under direction of the district office in Dallas.

This division handles multiwall paper bags, bag making and filling equipment used to package rock products, manufactured feeds, chemical, agricultural commodities and a number of other products.

A Very Merry Christmas to all our readers and their families from the Paper Trade Journal Staff.

Bennington Promotes Three

Three promotions of personnel at Ben-Mont Paper Inc., Bennington, Vt., have been announced by John J. Cahill, vice-president.

Joseph T. Jaret, has been made national field sales manager. He will have headquarters at the New York office of the Dobeckmum Co., parent company.

Robert G. Moore will become field sales manager for the central states with headquarters in Chicago.

Keith E. Comey will succeed Jaret as advertising and sales promotion manager at the Bennington plant.

Management Promotions Made by Gaylord Container

Joseph P. Tarantino, Jr., manager of the Gaylord Container Corp's Tampa, Fla. plant, has been elected a director of the national corporation and appointed division vice-president in charge of the Florida division. His headquarters will be in Tampa.

The announcement was made along with the announcement of a merger of Gaylord Container Corp. of St. Louis with Crown Zellerbach Corp. of San Francisco.

In a separate report, the appointment of Joseph F. Ronan of Columbus, Ohio, as a member of its management advisory committee was announced November 29 by the Gaylord Container Corp.

Mr. Ronan is general sales manager of Gaylord's east central division, with headquarters in Columbus. Gaylord is now operating as a wholly-owned subsidiary of Crown Zellerbach Corp.

R. W. Maley Joins Chemical Paper Mfg. Co.

Richard W. Maley of Muskegon, Mich., has taken over the new position of assistant general superintendent of Chemical Paper Mfg. Co., Holyoke, Mass.

Mr. Maley has been with the S. D. Warren Co., in Muskegon and previously was employed by Hollingsworth & Whitney Co. and by Great Northern Paper Co.

Production and Technical Appointments at Gibraltar

Recent shifts in the supervisory personnel of Gibraltar Corrugated Paper Co., North Bergen, N. J. involve three men. Clyde A. Benson, formerly a private consultant with Gibraltar, has recently joined the firm as technical director.

In two other appointments Patrick C. Palmaccio, former paper mill chemist, has moved to Gibraltar's box plant as corrugator supervisor, and Tom Manogue takes over as paper mill chemist.

Briggs Named Research Mgr Of Rayonier's Olympic Div.

Dr. Ben T. Briggs has been appointed research manager of the Olympic Research Division of Rayonier Incorporated at Shelton, Wash.

At the same time it was announced that Dr. Arthur N. Parvett, vice-president in charge of research and development, will move to Rayonier's executive offices in New York after the first of the year, permitting close liaison with the sales, production and engineering departments now headquartered there.

With the completion of the company's Eastern Research Division facilities at Whippany, N. J., in 1956, Rayonier will operate three research centers, including the laboratory of Alaska Pine & Cellulose Ltd. at Vancouver, B. C.

Promotions at Oxford

Two promotions in the Oxford Co. were announced last week.

Richard M. Waldenmyer is being transferred to the New York Office, shortly after the first of the year, as assistant in purchasing to J. Everett Shea. He replaces E. Lee Muller who recently resigned. Mr. Waldenmyer is presently mill purchasing assistant in Rumford.

Elliott K. Hale, Rumford, accountant with the Oxford Accounting Department, will become assistant to R. E. Woodsum in the Mill Purchasing Department.

John Hanson Becomes Watervliet's Chief Forester

John Hanson has accepted a position as Chief Forester with the Watervliet Paper Co., Watervliet, Mich.

Mr. Hanson has been forest management and utilization specialist with the Forestry Division of the Michigan Department of Conservation since 1948.

He will be stationed at Clare, Mich. in charge of a wood concentration yard where rough aspen pulpwood will be received, peeled and shipped to the mill at Watervliet. The job will also call for working with private woodland owners regarding forest management problems as a means of insuring a long-term wood supply within an eight to ten county area tributary to the Clare location.

Torgeson Advances at Western Paper Converting

Kenneth R. Torgeson has been elected secretary and assistant treasurer of Western Paper Converting Co., Inc., at Salem, Ore., which firm he has served as sales supervisor for sometime.

The paper firm manufactures stationery for home, school and office use.

A. B. Meyer

Bowater Elects Two New Directors

The Bowater Paper Corp. Ltd. announces that A. B. Meyer, head of Bowater sales in North America, and H. M. S. Lewin, chief of Bowater Newfoundland operations, have been appointed full members of the parent company's board of directors.

Both men have previously been special directors of the parent corporation, an honorary position without the duties and powers of full directors.

Mr. Mayer is president of The Bowater Paper Co., Inc., of New York, a vice-president of Bowaters Southern Paper Corp., located near Chattanooga, Tenn.—the organization's first manufacturing plant in the United States—and a director of The Bowater Corp. of North America Ltd. which is the top Bowater holding company on this continent.

Mr. Lewin is vice-president and chief executive officer of Bowater's Newfoundland Pulp & Paper Mills Ltd., whose mill at Corner Brook is the world's largest integrated paper mill, and a director of The Bowater Corp. of North America Ltd.

Carl Schott Retires as V. P. With Hinde & Dauch

After 41 years of service with the company, Carl M. Schott will retire as vice-president of the Hinde & Dauch Paper Co. at the end of December. Mr. Schott is responsible for Hinde & Dauch sales in Michigan, Ohio, Indiana, western Pennsylvania and West Virginia.

A veteran of the corrugated box business, he joined Hinde & Dauch in 1914 as district sales manager in Detroit. He moved to Sandusky in 1932 to become Sandusky district sales manager. He was elected a vice-president in 1950. After January 1, he will continue to make his services available to the company as a consultant.

Penobscot's Freedman Honored by N. E. Council

Louis J. Freedman, president of the American Pulpwood Association, has received the New England Council's 4th Annual Forestry Award for distinguished service in forest management. The citation came at the Council's 31st annual conference. Mr. Freedman is vice-president in charge of woodlands for the Penobscot Chemical Fibre Co. at Great Works, Maine. He is known and respected nationally as an outstanding leader in industrial forestry.

St. Regis Names Manager For Richmond, Ind., Plant

Eli Hartz, who has served as chief engineer of the St. Regis Paper Co.'s Panelyte plant at St. Jean, Quebec, has been named manager of the vacuum forming plant of the Panelyte Division at Richmond, Ind. Succeeding Mr. Hartz as chief engineer at St. Jean is Jack Sibalis, formerly assistant chief engineer.

Nelson Becomes New Brooks Co., Comptroller

Carl Nelson has recently been named comptroller of the Brooks Co., Springfield, Mass. He comes out of retirement to assume the job. Mr. Nelson was formerly comptroller of Smith & Wesson Inc.

The appointment was made by J. L. Brooks, president of the box company, following the death by suicide of A. R. Sanger, executive vice-president of the Brooks firm.

Greene Heads Envelope Department at Atlas

Atlas Paper Box Co., Chattanooga, Tenn., has appointed I. J. Greene, head of the firm's new envelope department.

Greene, formerly of Nashville and Memphis, has 23 years experience in the manufacture of business and commercial envelopes.

M. A. McLeod to Retire From American Pad

Murdie A. McLeod, plant superintendent of the American Pad & Paper Co., will retire December 31. He has been with this Holyoke, Mass, firm for 40 years. Prior to his appointment as superintendent in 1937, he was foreman of the ruling department.

Mr. McLeod was feted recently by 90 employees of the company. They presented him with a watch and a purse. On behalf of the company, Donald R. Taber, Treasurer, presented Mr. McLeod a barometer.

EVERY ROLL RUNS COMPLETELY CLEAN, CONTINUOUSLY CLEAN AT TOP SPEED

when you use

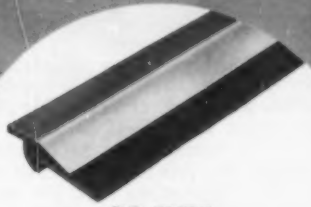
VICKERY DOCTORS

HI-ANGLE

The Vickery Hi-Angle Doctor combines light pressure with extraordinary cleaning efficiency. It is *leak-proof*. Often used on breast rolls, press rolls and wire rolls.

HI-FLEX

The Vickery Hi-Flex Doctor is often used to assure perfect blade contact along calender and super-calender rolls.



RS TYPE
for quick blade change

The Vickery RS Doctor permits rapid insertion and removal of blade and blade housing from either end or rolling it in transversely. Many mills are standardizing on the RS Type for all their rolls.

MOTOR OR HYDRAULIC OSCILLATION

Whenever oscillation is indicated in order to assure maximum operating efficiency, it is recommended and supplied with Vickery Doctors.

AIR LIFT

May be readily applied to any Vickery Doctor installation and designed so that each individual Doctor or all Doctors at once may be lifted from the rolls at the touch of a control lever.

Long or short rolls, hot or cold rolls, breast, wire and press rolls, dryers or calender rolls, whatever your roll cleaning problem there is a Vickery Doctor to give you complete, uniform blade contact over every inch of the roll at all times — with no danger of scoring the roll surface — with negligible braking effect.

Write for recommendations, layouts and estimates.

BIRD MACHINE COMPANY
South Walpole, Massachusetts

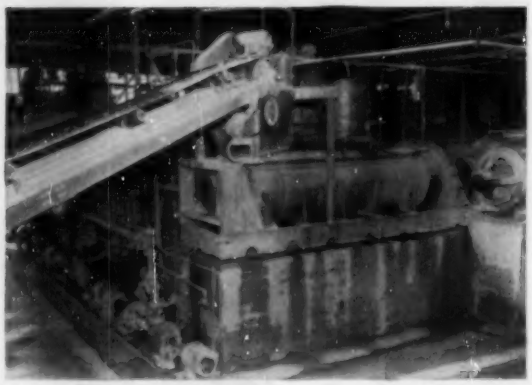
Regional Offices: Evanston, Illinois • Portland, Oregon • Decatur (Atlanta), Georgia

NO OTHER AMERICAN CLAY AS THE INDUSTRY'S

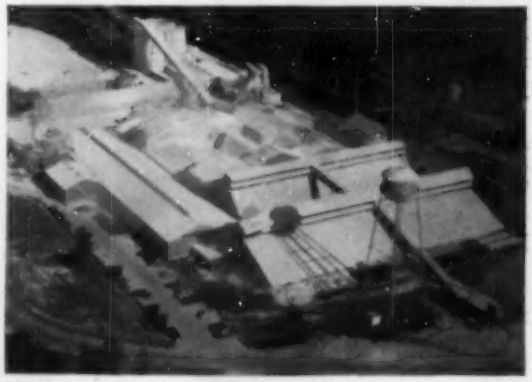
For These Reasons:

The *total* combined range of Huber products, methods, and services is without duplicate in the industry. Only Huber offers you a total range of production methods: spray, drum, rotary, tunnel dried; *plus* a total range of clays: airfloated, water-washed, filler, coating; *plus* vast storage facilities and selective mining; *plus* unique quality controls such as the patented pugmill process that gives you VISCONTROL —patented viscosity control.

*N. Millman, *Paper Trade Journal*, February 1951.



Viscontrol. Huber's new patented pugmill process for controlling waterwashed clay viscosity, provides you with all the advantages of coating clays with uniform flow characteristics. The process, developed by Huber in 1951*, and proven through actual field performance, significantly reduces the problems associated with modern high-speed coating operations. You are assured faster, more uniform production, with fewer adjustments.



Extensive refining facilities make Huber better able to supply filler and coating clays *exactly* adaptable to your needs. No other clay producer, in fact, utilizes so wide a variety of refining equipment—complete, modern air-flotation plants, hydroseparators for fractionation of crude clay, modern filtering and extrusion equipment and tunnel, rotary, spray, and drum driers

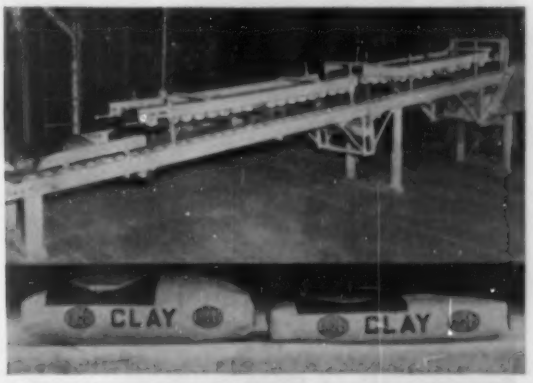
HUBER **J. M. HUBER CORPORATION**

PRODUCER MATCHES HUBER PRIME SOURCE OF SUPPLY

Scientific prospecting is carried on by Huber engineers years ahead of actual clay removal. Long before mining begins, exact properties of the clay in every part of a deposit are established. This prospecting, using every modern technique of sampling and laboratory evaluation, together with VISCONTROL for water-washed grades, guarantees you a plentiful, uninterrupted supply of clays of consistent quality—year after year.

Selective mining from several different deposits is a big factor in Huber's ability to maintain consistency in the quality of its clays. With every necessary facility for carrying on full-scale mining operations in not one, but *several* locations, Huber is *always* able to have in its storage bins abundant clays of precisely the right properties to fill your needs. These facilities assure you of the same quality from day-to-day and year-to-year.

Ample storage capacity is important if sufficient quantities of crude and refined clay are to be kept available above ground as a guard against shortages brought about when bad weather might interrupt mining operations. Huber's vast storage system contains clay sorted and stored according to properties that have been precisely determined in the laboratory.



Improved shipping methods save you time and money. Huber clay is pampered all the way to your plant... cars are vacuum-cleaned... bags are de-aired, *cutting storage space 20 percent* and making handling easier. Packed on wood pallets or fibreboard sheets, unloading is speedy, economical. In these ways, Huber cuts shipping losses, and handling and storage costs.

100 PARK AVENUE • NEW YORK 17, N. Y.

One of the World's Largest Clay Producers

HUBER

NOW no bead,

CONTOUR-WELD PIPE...BEST BY ANY TEST YOU CAN NAME

no undercut

in new type welded stainless steel pipe

Now, TRENTWELD is better than ever! Thanks to Trent's new patented *Contour-Weld** process, you can now get stainless pipe or tubing that's really smooth inside . . . free from any undercut or projecting weld bead.

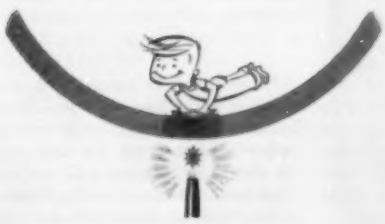
Check these Benefits

As before, this new-type TRENTWELD is made from uniformly rolled stainless strip. That's why you'll always get extremely high uniformity both of wall thickness and curvature. And Trent's new *Contour-Welding* brings that same uniformity to the weld zone itself. This means a stronger pipe or tube with smoother flanged or flared ends . . . no cavitation corrosion or erosion . . . better performance in every category than with any other, welded or not.

Try new Trent *Contour-Welded* pipe or tubing for yourself. It's a natural for pressure lines . . . lines carrying corrosive chemicals . . . high-velocity systems. And remember, it's made by Trent—tube-mill specialists.

Why Trent's Exclusive *Contour-Weld* Process Means Smoother Welds . . .

With conventional welding, gravity means beads . . . or undercut, particularly in heavy sections. Gravity pulls some of the molten metal down into the toe to form a bead that is extremely difficult to remove by cold working. And cold working of the inside bead can lead to undercuts, focal points for erosive and corrosive attack. Cleaning becomes difficult.

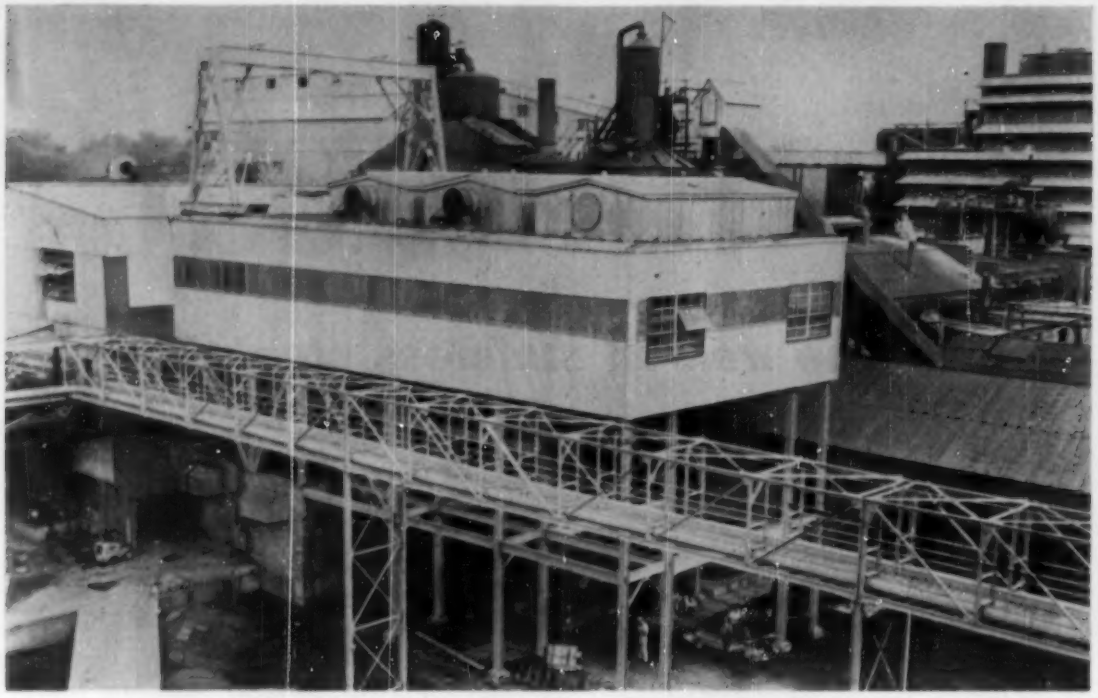


With new Contour-Welding, gravity means smoothness. Trent's new *Contour-Welding* puts gravity to work. The pipe is inverted, and welded at the bottom. Gravity still pulls the molten metal down — but that simply makes the weld-bead contour correspond to the contour of the pipe itself. That's why there's no tell-tale bulge of weld metal on the critical inside surface. And even on the outside, the weld bead more closely approaches that of the parent metal than other welded pipe.

Contour-Weld is the trade mark of the Trent Tube Co. for its process of welding pipe and tubing which is protected under U.S. Patent 2,716,692.

TRENTWELD **STAINLESS STEEL TUBING**

TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN (Subsidiary of CRUCIBLE STEEL COMPANY OF AMERICA)



NO WALLS enclose the supporting beams of Halifax's new washer room. Stock and liquor pumps, mounted on the ground, are remarkably accessible and simple to relocate if necessary.

Bold Design Distinguishes Latest Plant Improvements At Halifax Paper Co.

Unusual features of the new construction include a pulp washing room on stilts and a water pumping station without valves.

Steadily increasing paper production at Halifax Paper Co., Roanoke Rapids, N. C., has demanded an equal step-up in the company's integrated kraft pulp mill. New equipment has been found necessary in several phases of the process. To supply this need, Halifax hired Ebasco Services Inc., New York City, to engineer and erect more pulp washing equipment, new black liquor evaporators, additional digesters, and a new pumping station in the mill water supply line.

The details of this improvement program are of particular interest because of the progressive engineering and design features that went into the pulp washing room and the pumping station. Ebasco's A. P. Schnyder was chief engineer of the project and C. E. Williams of Ebasco was project engineer in charge of coordinating and administration.

Low Headroom Over Washers

A needed increase in pulp washing capacity was obtained with the addition of two Impco valveless brown stock washers, each with cylinders 11 foot 6 inches in diameter x 20 feet long. They were designed to operate with one intermediate and a final repulper. These units, with space provided for a third washer when needed, were installed in a new washer room measuring 87 feet x 40 feet. The room was designed by Ebasco engineers with an unusually low overhead of only 12 feet 8 inches.

To provide means for pulling out the washer cylinders, the designers devised the penthouse fan housings over each washer so that they are removable. A gantry crane, fitted with rollers and mounted on tracks, spans the roof of

the wash plant and can be moved over any of the penthouses. (See accompanying photo).

After the penthouse has been lifted and placed on an open section of the roof, the gantry can return to the exposed washer and accomplish the pulling of the cylinder. The advantage of this overall design lies in a large cost reduction through elimination of high side walls and the necessary supporting structure found in most washer rooms.

The room is finished off with corrugated asbestos siding and Resolite plastic panels to provide natural lighting in the room.

Installed ahead of the new washers is an Impco three basket pre-knotter with only one basket in the initial installation. The knots are collected by a Link Belt drag chain conveyor and are fed into a previously existing drag chain line that discharges the knots into a converted diffuser tank now used for black liquor storage.

Mixco agitator in the base of this tank holds the knots in suspension until they are eventually reintroduced into the digesters during the liquor filling operation.

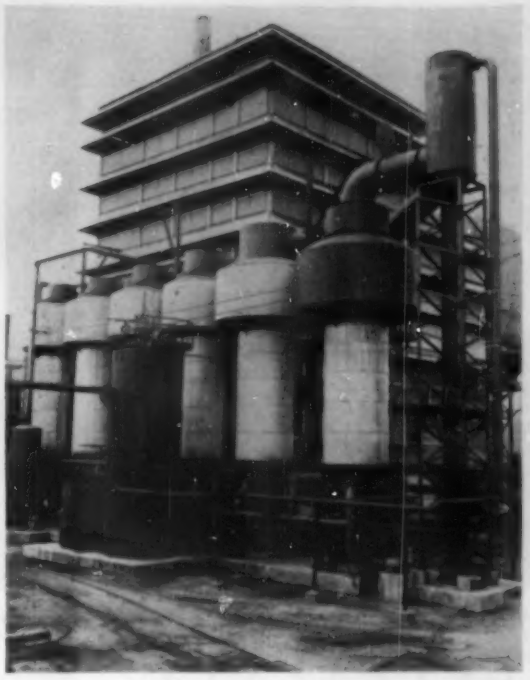
The new stock pump from the existing blow tank to the new washers is a 2400 gpm Gould pump with an American Blower variable-speed fluid coupling on the drive. General Electric motors and starters are utilized on the washer drives. The hood and ventilating equipment over the washers is by J. O. Ross Engineering Corp. including Sturtevant fans. Washing control instruments were supplied by the Foxboro Co. with a graphic panel in full view of the operator.

Valveless Pumping Station

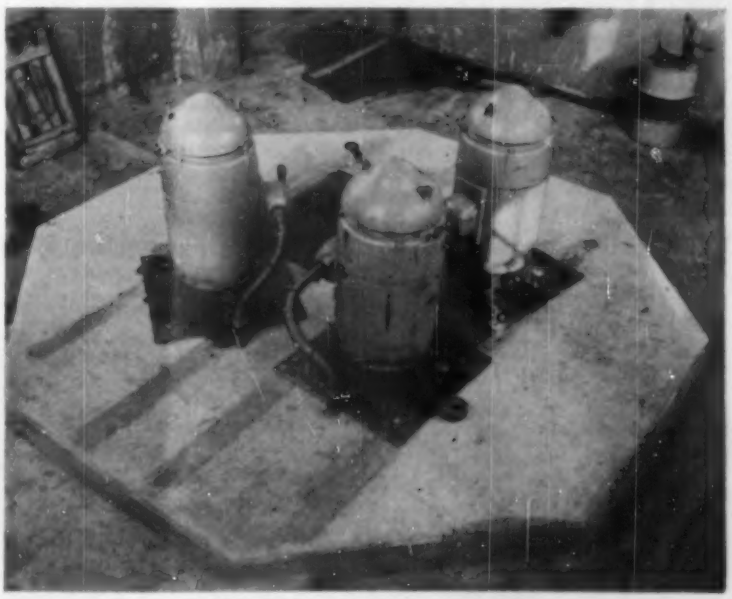
The mill process water at Halifax is received at the mill's modern filtration and clarifying plant by a canal from the Roanoke River. Recently, new dam construction on the Roanoke altered the river channel above the Halifax mill so that the mouth of the canal was left dry. It was necessary, therefore for Ebasco engineers to design and construct a pumping station to lift the required mill water 40 feet from the river into the canal.

The unique feature of the new unit is that absolutely no valves are required to control the flow through the pumping station. None are installed in the line. A Warwick level controler measures the water level in the canal and automatically starts or stops the pump motors in order to maintain the proper level. Provision is made to handle any emergency overflow.

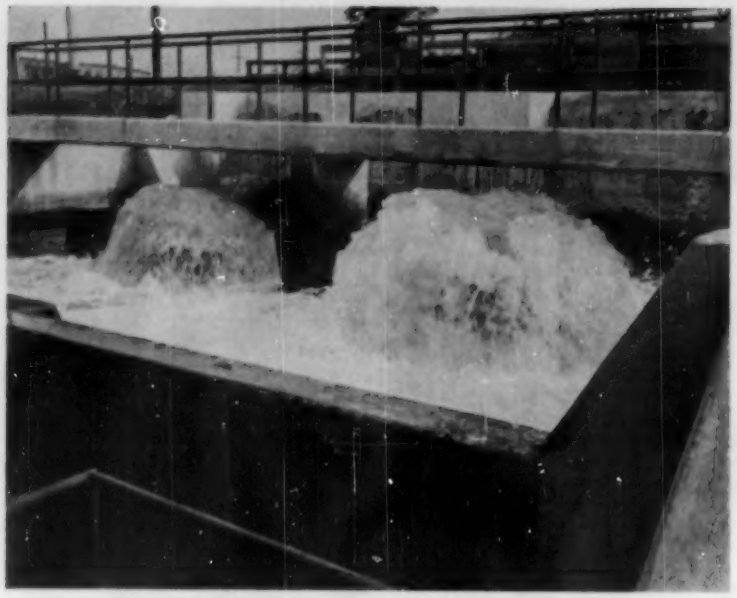
The station is equipped with three vertical pumps with space for a fourth. They are Worthington 15 KJA-20 units, rated at 10,000 gpm each.



OPEN-AIR EVAPORATORS typify modern out-door construction trend. This new line of six effects at Halifax is insulated with fiber glass.



UNATTENDED PUMPING STATION now supplies mill water to the Halifax mill. Valveless design eliminates need for operator. Indicating and control instruments are located in the boiler house, some distance away.



DISCHARGE BASIN of the pumping station is at level of mill's water supply canal. Lift from river is 40 feet. Open-end pipes above level in the basin permit valveless operation and provide beneficial aerating action.

Digester Expansion

The improvement program at Halifax also called for the addition of the new digesters which were installed in line with the existing eight units. The new pulping capacity has raised the mill's output of unbleached kraft pulp from 325 tons per day to 450 tons.

The digesters are each of 3,000 cubic-foot capacity, unlined and measure 37 feet high x 11 feet inner diameter. They were fabricated of A289 firebox steel by Chicago Bridge & Iron Co. The digesters function with direct steam cooking. Blow valves are by Yarnall Waring; the pressure reducing valve is by Mason Neilan; and a special steam flow meter by Republic Flow-Meters has been installed in the office of the pulp mill superintendent.

Along with the erection of three more digesters went an extension of the digester building and the chip storage bin above the digesters.

Included was the installation of a Syntron vibrator at each of the three openings of the chip bin over the new digesters. These vibrators improve the flow of chips considerably.

The Jeffrey chip conveyor extension services the new bin section, and a new Buffalo Forge ventilating fans were added in the digester building.

Open-Air Evaporators

Another phase of the expansion project was the installation of a new line of multiple-effect black liquor exaporators. The new six-body, six-effect Goslin-Birmingham units replace the old evaporators.

The installation was made completely out-of-doors, and fiber glass insulation was applied to each effect. The first effect is divided into two passes to promote heat transfer.

The accompanying photograph of the new evaporators shows them against the background of Halifax's Combustion Engineering recovery unit and Koppers precipitator. A second recovery unit is now being installed.

Worthington pumps transfer the liquor between the effects of the evaporator and Viking pumps are used to handle soap skimmings. Recording instruments on the evaporators are by Foxboro with a graphic panel located in the recovery control room.

Continued Growth of Halifax

The expansion reported above is but one phase in a program of steady growth at this long-established mill. Halifax Paper Co., now an operating Division of Albermarle Paper Mfg. Co., Richmond, Va., got into production back in 1905. It was the first kraft pulp mill in this country.

The largest single expansion move was completed in January 1953 when a new complete paper mill was placed in operation. (See *Paper Trade JOURNAL*, May 8, 1953, pp. 16-22).

The plant officials most closely associated with the details of the latest project are K. F. Adams, vice-president and division manager; H. W. Ellerson Jr., general superintendent; C. L. Wills, plant engineer; and K. D. Running, pulp mill superintendent.

These Men Supervised the Halifax Expansion Project . . .

K. F. ADAMS
Vice-President and Division Manager

H. W. ELLERSON, JR.
General Superintendent

C. L. WILLIS
Plant Engineer

K. D. RUNNING
Pulp Mill Superintendent

neoprene Paper News

4

Paper treated with NEOPRENE LATEX is ideal for packaging applications

Paper and board having good wet strength, elongation, conformability, abrasion resistance and sizing can be highly useful packaging materials. Paper and board, treated with neoprene latex, possess these desired physical properties . . . plus the physiological inertness necessary for many food packaging applications.

● IN PAPER MANUFACTURING

Neoprene-treated paper and board have significantly improved wet strength, elongation, internal bond strength and other physical properties . . . make a valuable product for use by the packaging industry.

● IN CONVERTING

Neoprene-treated sheet simplifies operations because it absorbs stresses and takes up shocks on converting machines. Conformability, ply adhesion and smoothness provided by the neoprene treatment benefit the converter.

● IN FINAL USE

Improvements in all wet properties, burst strength and abrasion resistance, plus the conformability and folding endurance of neoprene-treated paper, all contribute to a high-quality product for the user.

● APPLICATIONS

The table summarizes some of the potential packaging applications where the properties of neoprene-treated paper are important.

● PHYSIOLOGICAL INERTNESS

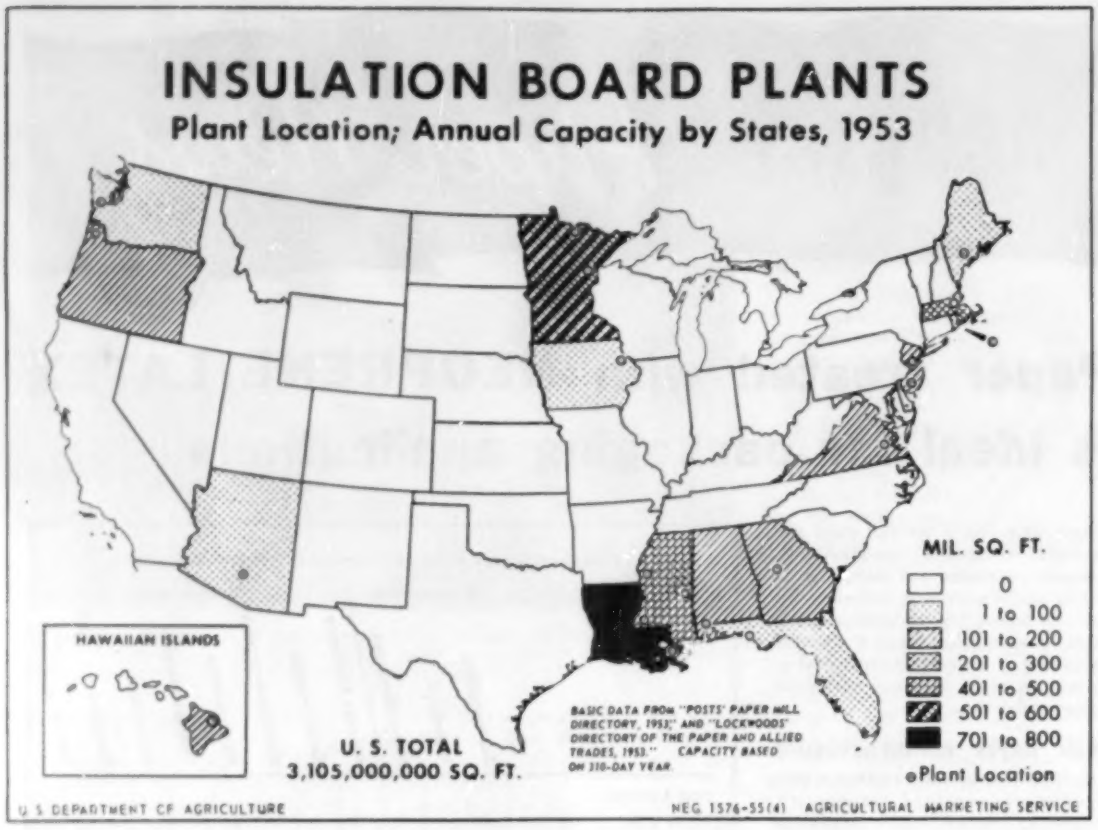
Laboratory tests indicate that neoprene-treated paper may be used for packaging a wide variety of foodstuffs including dry cereals, butter, oleomargarine, shortening, lard, cheese and milk. In order to comply with the regulations of the United States Food and Drug Administration, however, the physiological inertness of packages and products must be assured.

Analytical techniques for determining the extraction of the components of neoprene under acidic and alkaline conditions and in various food products have been developed and filed with the Division of Pharmacology, United States Food and Drug Administration. For further information and assistance, write: E. I. du Pont de Nemours & Co. (Inc.), Elastomers Div., Dept. PT-12, Wilmington 98, Delaware.

Required Properties of Neoprene-Treated Paper

	IN CONVERTING			IN FINAL USE						
	Conformability	Smoothness	Stress Absorption	Abrasion Resistance	Burst Strength	Chemical Resistance	Conformability	Folding Endurance	Ply Adhesion	Smoothness	Wet Strength
FOR USE IN:											
Ice Bags	X	X	X	X	X	..	..	X	..	..	X
Market Bags	X	X	X	..	X	..	..	X	..	..	X
Salt Bags	X	X	X	X	X	..	..	X	..	X	X
Sugar Bags	X	X	X	X	X	..	..	X	..	X	X
Shipping Cartons	X	X	X	X	X	X	..	..	X	X	X
Coffee Cups	X	X	X	..	..	X	..	..	..	X	X
FOR USE AS BASE PAPER* IN PACKAGING:											
Liquids	X	X	X	..	..	X	..	..	X	..	X
Frozen Foods	X	X	X	X	X	X	..	..	X	..	X
Cheese	X	X	X	..	..	X	..	..	X	..	X
Fruit	..	X	X	X	X	X	X	X	..	..	X
Meat	..	X	X	X	X	X	X	X	X	..	X
Produce	..	X	X	X	X	X	X	X	..	..	X

Paper containing small amounts of neoprene is not waterproof. For packaging products, such as milk and other liquids, where no penetration is allowable, a waterproof coating must be applied.


INSULATION BOARD PLANTS
Plant Location; Annual Capacity by States, 1953
MIL. SQ. FT.
0
1 to 100
101 to 200
201 to 300
401 to 500
501 to 600
701 to 800
Plant Location
HAWAIIAN ISLANDS
U. S. TOTAL
3,105,000,000 SQ. FT.
BASIC DATA FROM "POSTS' PAPER MILL DIRECTORY, 1953," AND "LOCKWOODS' DIRECTORY OF THE PAPER AND ALLIED TRADES, 1953." CAPACITY BASED ON 310-DAY YEAR.
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1576-55(4) AGRICULTURAL MARKETING SERVICE

Insulation Board Manufacture and Economics

Bagasse served as the first raw material for the manufacture of insulation board. A private corporation pioneered the development of this product and began production in 1920 at Marrero, Louisiana — just across the Mississippi River from New Orleans. Since that time other manufacturers have entered the field, utilizing mostly wood as raw material. Waste paper, licorice root, and straw are also serving as raw materials; and a second bagasse plant is in operation at Hilo on the Island of Hawaii.

Industry Growth

The production of insulation board increased from 1,670 million square feet in 1941 to 2,428 million square feet in 1953, though 3 rather distinct production periods are apparent during this span of years *(Table I)*. During World War II the industry operated at more than 90 percent of rated capacity, but increases in production were precluded primarily by lack of materials for capacity expansion. Immediately after the war capacity expanded rapidly, and production rose sharply to a new and much higher plateau in response to demand for construction materials. Since 1948 insulation board production has been quite stable, except for a sharp interruption in 1949 when production fell below that of any year during the period covered, due principally to reduced building activity. (The data on production of insulation board in 1953 are slightly inflated compared to previous years, because the Bureau of the Census changed the classification from boards with densities of 24 pounds or less per cubic foot to boards with densities of 26 pounds or less per cubic foot *(Table I)*.) In addition, industry capacity has changed little in recent years. From 1950 to 1953, the insulation board industry operated at about three-quarters of capacity.

Estimates by the U. S. Department of Commerce and the U. S. Department of Labor at the time of publication indicated that on a dollar basis 1954 would be a record breaking year in construction activity. For 1955, new construction activity is expected to reach an all-time high of $39½ billion, 7 percent above the $37 billion volume indicated for 1954, possibly indicating increased demand for insulation board. New residential building (nonfarm) is expected to increase by 13 percent to $15 billion and to account for 55 percent of all private construction next year.

From "Possibilities for Expanding the Market for Sugarcane Bagasse." Marketing Research Report No. 95, Marketing Research Division, U. S. Dept. of Agriculture.

Market Growth by Types of Insulation Board

Most insulation board is manufactured in the higher density ranges for this type of board and has "structural" strength as well as insulating and sound-absorbing qualities. These boards have many uses in housing and allied applications. Insulation boards manufactured in the lower density ranges have about the same heat flow characteristics as blanket or batt insulation and are used in truck bodies and other places where vibrations are so severe that batt insulation may shift or pack.

The principal types of insulation board presently being produced are the following: (1) Sheathing board (asphalt waterproofed on the sides and edges), (2) insulating siding base (backing for building siding, such as asphalt shingles), (3) building board, natural finish (used for the exterior of buildings), (4) roof insulation, (5) lath for plaster base, (6) boards factory finished and decorated for interior use (tile, planks, panels, and wall boards), and (7) thinboard. Insulation boards vary in thickness from about ⅜ inch to 1½ inches, but most types are about ½-inch thick. Some interior tile is especially processed for acoustical purposes. This type of tile has a high-density surface through which numerous small holes have been drilled to break the sound pattern.

Since 1947, the Bureau of the Census has reported annual production of the various types of insulation board *(Table II)*. The production of building board, natural finish, lath for plaster base, and boards finished or decorated for interior use declined in relative importance and in actual quantity manufactured between 1947 and 1952. The types of board which were produced in larger quantities in 1952 than in 1947 were roof insulations, panel (including tile), plank, sheathing, insulating siding base, and thinboard.

TABLE I—Insulation board: Production and capacity, surface measure, and production as percentage of capacity, 1941-53.

YEAR	PRODUCTION[1,2]	CAPACITY[3]	PRODUCTION AS A PERCENTAGE OF CAPACITY
	Million square feet	Million square feet	Percent
1941	1,670	1,848	90.4
1942	1,849	1,898	97.4
1943	1,776	1,898	93.6
1944	1,789	1,944	92.0
1945	1,826	1,942	94.0
1946	1,952	1,901	102.7
1947	2,100	2,387	88.0
1948	2,387	2,669	89.4
1949	1,602	2,887	55.5
1950	2,321	3,076	75.5
1951	2,383	3,060	77.9
1952	2,242	3,105	72.2
1953	[4]2,428	3,105	78.2

[1] Data for 1941-46 from files of Dr. Arthur G. Keller, Professor Chemical Engineering, Louisiana State University; 1947-53 from "Facts for Industry" *(31)*.
[2] Before 1953 the Bureau of the Census classified insulation board as those boards with densities of 24 pounds or less per cubic foot. In 1953 the classification was changed to 26 pounds or less per cubic foot.
[3] Computed for a 310-day year from data on daily rated capacity as reported for the various insulation board firms by "Lockwood's Directory of the Paper and Allied Trades" *(15)* and "Posts' Paper Mill Directory" *(21)*.
[4] Thickness not specified in source data except 1953 production, which is on ½" thick basis.

Cost of Producing Insulation Board

No data are available on current costs of manufacturing structural insulation board. However, an unpublished analysis by Dr. Arthur G. Keller, Professor, Chemical Engineering, Louisiana State University, develops such costs under 1947 conditions. This study assumes a plant capacity of 550,000 square feet of ½-inch thick board per 24-hour-day and a location in the Louisiana sugarcane area. On this basis Dr. Keller shows production costs broken down per 1,000 square feet of ½-inch board as follows:

Sales price, f.o.b. factory		$29.31
Direct costs:		
Raw materials (bagasse, wastepaper, chemicals)	$ 5.58	
Labor	4.50	
Other direct costs	3.91	
Total direct costs	$13.99	
General and administrative costs	7.66	
Total costs		21.65
Net		$ 7.66

A plant producing 550,000 square feet of insulation board a day will produce about 170 million square feet a year. To maintain this production rate, the plant would require approximately 57,000 tons of bagasse, bone-dry basis, annually, as-

TABLE II—Insulation Board: Production by Types, 1947-52

TYPE	QUANTITY[1]						PERCENTAGE					
	1947	1948	1949	1950	1951	1952	1947	1948	1949	1950	1951	1952
Building board, natural finish Lath for plaster base Roof insulation board	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	per-cent	per-cent	per-cent	per-cent	per-cent	per-cent
Interior board, factory finished	306,526	481,706	321,144	549,306	450,018	268,246	14.4	20.2	20.0	23.7	18.9	12.0
Wallboard	88,848	129,238	68,040	140,531	103,812	64,165	4.2	5.4	4.2	6.0	4.4	2.9
Panel, including tile	107,253	149,448	134,453	185,251	180,010	187,167	5.0	6.2	8.4	8.0	7.5	8.3
Plank	641,018	678,149	321,824	376,624	417,844	391,413	30.1	28.4	20.1	16.2	17.5	17.5
Sheathing board	193,004	331,422	241,517	314,781	357,761	379,244	9.1	13.9	15.1	13.6	15.0	16.9
Insulating siding base	31,803	44,746	39,310	42,458	51,993	55,031	1.5	1.9	2.5	1.8	2.2	2.4
Thinboard (⅜" thick or less)	196,737	525,120	173,349	398,539	393,390	457,558	9.2	22.0	10.8	17.2	16.5	20.4
Other insulating board (not laminated) including other interior	[2] 565,712	[2] 47,126	246,882 44,397 10,641	234,244 55,314 23,897	309,507 92,172 26,373	324,041 84,622 30,721	[2] 26.5	[2] 2.0	15.4 2.8 .7	10.1 2.4 1.0	13.0 3.9 1.1	14.4 3.8 1.4
Total	2,130,901	2,386,955	1,601,557	2,320,945	2,382,880	2,242,208	100.0	100.0	100.0	100.0	100.0	100.0

[1] Square footage of board of varying thickness as it comes off production line.
[2] Not reported separately.
Basic data from "Facts for Industry" *(31)*.

suming a finished board made from pulp comprised of 75 percent bagasse and 25 percent wastepaper. One ton of bone-dry bagasse will produce about 3,000 square feet of board mixed with wastepaper in these proportions.

In 1947, according to Dr. Keller, a bagasse insulation board plant of the size assumed above would have cost approximately $5,200,000, including $1,000,000 working capital. This estimate excludes the costs of land, railroad sidings, manufacturing supplies, and any baling stations that the manufacturer might be required to maintain at sugar mills to obtain bagasse. At least 35 acres of land for all facilities and equipment would have been required for such a plant.

The capacity selected by Dr. Keller as being of minimum capacity in 1947 for reasonably profitable and stable operations was about equal to the present average for the industry. In 1953 insulation board plant capacity averaged about 500,000 square feet per 24-hour day. In addition, the largest number of plants had capacities ranging near 500,000 square feet per day, though some were much smaller.

Profit Trends

Most insulation board firms manufacture other types of building materials, including other kinds of structural board, such as gypsum board. Published source material on these companies counted insulation board production as being the major activity of only 3 of the 20 companies producing insulation board in 1953. One of these firms uses bagasse, the others use competing raw materials. For these 3 companies, net profit after income taxes as a percent of net worth was calculated for 1947 to 1953.

Since their joint capacity was equal to about a third of industry capacity in recent years, trends in their financial position should be indicative of overall trends for insulation board manufacture. The sources of the financial data used for computation were reports published by the Securities and Exchange Commission *(42)* and reports published in "Moody's Manual of Investments-Industrials" *(18)*. The net profit-net worth ratios for the years covered are shown below:

	1947	1948	1949	1950	1951	1952	1953
Percent	33.2	28.6	6.8	10.1	10.9	4.9	9.0
No. Co's	3	3	3	3	3	3	3

During 1947 and 1948, profits on investments were comparatively high. However, since that time the percentage of net profit on net worth has declined to a more modest level. The bagasse producer appeared to have no cost-price advantage during the period covered.

TABLE III—Insulation board: Price per 1,000 square feet, annual average, 1947-52, by months, 1953[1]

YEAR AND MONTH	PRICE Dollars
1947	37.8
1948	41.6
1949	42.2
1950	43.6
1951	46.9
1952	47.9
1953	
January	49.0
February	49.0
March	49.0
April	49.0
May	51.0
June	51.0
July	51.0
August	51.0
September	51.0
October	51.0

[1] Price per 1,000 square feet, interior board, ½ inch by 4 feet by 8 feet, manufacturer to dealer or jobber in carlots, full freight included.
Computed from data in "Prices and Price Relatives" *(25)*.

Price Trends

The insulation board manufacturer divides the country into freight differential zones and charges all dealers and jobbers within each zone the same price per carlot delivered.

As noted in a later section entitled "Evaluation of relative quality by users and distributors of insulation board," the building materials dealers and users interviewed indicated that the competing insulation board firms seldom engage in extensive price cutting. Prices of all brands offered in an area are ordinarily uniform for the various types of board. A firm devotes its attention to other markets if it cannot compete at the going price. Most manufacturers endeavor to expand sales through merchandising and dealer service activities, rather than by discounting prices, according to the dealers interviewed.

Insulation board prices increased steadily from 1947 to mid-1953, showing a tendency to level off the last half of 1953 *(Table III)*. This rather strong price trend has continued in spite of materially reduced earnings on investment in recent years, indicating an even stronger upward trend in costs.

Markets for Insulation Board

The insulation board industry must look principally to the construction industry and individual home users for outlets, and therefore its markets are widely dispersed throughout the country. Areas in which population growth is greatest or where commercial development is going forward are, of course, the markets in which the opportunities for expanded sales are most promising.

Low-density insulation boards are also used for heat insulation in truck and bus bodies, automobiles, refrigerators, railway cars, on the outside of duct work, and in other places where vibrations are so severe that loose-fill or batt insulation may pack or shift. And they are used as sound insulation, for the walls of telephone booths, public address systems, and phonographs, and as cushioning in utility quality furniture and packaged material.

The export market apparently offers little opportunity for increased sales of insulation board. Since 1946 only 2 to 3 percent of total production has been exported, and there is no growth trend evident *(Table IV)*.

Market Competition Among Producers

The location of the Nation's insulation board plants operating in 1953 and total capacity by States are shown in figure 1. The greatest concentration of plants in 1953 was in the South where six are located in or near the lower reaches of the Mississippi River. Louisiana has the largest total daily capacity of any State, followed in order by Minnesota, Mississippi, Massachusetts, New Jersey, Virginia, Alabama, Georgia, Oregon, the Territory of Hawaii, and Washington. In contrast, there were no insulation board plants in the States contiguous to the lower Great Lakes nor in the Plains area.

Data are not available on actual insulation board production by type of principal raw material used. But it is possible to compute plant capacity by type of raw material from data in "Lockwood's Directory of the Paper and Allied Trades."

Judging from trends in plant capacity in the insulation board industry, bagasse board has not shared equally in the vast increase in the market that has taken place in recent years. From 1938 to 1953 total rated capacity increased slightly more than 100 percent, while capacity of plants using bagasse increased only about 48 percent *(Table V)*. As a result, bagasse board plant capacity declined from 35.6 percent to 26.2 percent of total industry capacity. Practically all this capacity loss, percentagewise, was matched by a net gain in capacity of plants using wood as raw material. The aggregate capacity of plants using raw materials other than wood or bagasse increased from 6.2 to 7.2 percent of total capacity during the period covered.

Relative Quality as Governed by Raw Material

Knowledge of the relative quality of bagasse insulation boards and competing insulation boards, as influenced by the raw material used, is important to persons considering the feasibility of building new board plants using bagasse or expanding present facilities for production of bagasse board. Information on quality factor was obtained from various fiber research and testing institutions, trade associations, distributors and users of insulation board, and from literature on the subject.

The Forest Products Laboratory, the National Bureau of Standards, Louisiana State University, and the Northern Utilization Research Branch were visited to get information and opinions on board quality characteristics.

Most researchers interviewed believed that raw material used has little influence on the quality of the finished insulation board. The opinions of the persons interviewed at the National Bureau of Standards are typified by published results of extensive tests on the properties of fiber boards made from wood, bagasse, cornstalks, licorice root, and wastepaper. A report[1] on these tests includes a summary of findings quoted in part as follows:

> That the source of the vegetable fiber used has a relatively unimportant effect on the essential properties of the boards may be observed from the rather uniformly good correlation between the density and other properties, especially thermal conductivity, for all boards.

Insulation board specialists at the Forest Products Laboratory supported these conclusions, indicating that the quality of insulating board depends mostly on the skill or care of manufacture. In their opinion, the bagasse boards presently on the market represent about average quality. It was pointed out that two or three competing boards have greater strength and resistance to sag than bagasse board, while others are not as well made as bagasse board.

Persons interviewed at the Northern Utilization Research Branch took a somewhat different view than those at the other institutions visited. They indicated that the quality of building boards was influenced significantly by the raw material used. According to tests at NURB, the structural and nail holding strength and the resistance to impact of bagasse board was greater than that of board of equal density made from other raw materials. Other important quality factors such as insulating value, permeability to air and water, and appearance, were not believed to be dependent on raw material but on methods of manufacture.

The Federal Specifications for insulating fiberboard deal very briefly with types of material from which fiberboard should be made. The raw materials specifications are as follows:

> Boards shall be manufactured from wood or other vegetable fiber, by a felting or molding process, suitable sizing material being incorporated in the product to render it water resistant. The materials shall be subjected to such drying temperature as to effect complete destruction of rot-producing fungi.

Users, builders, and retail distributors of building materials were interviewed to ascertain their opinions of comparative quality characteristics of board made from bagasse and other raw materials. The users interviewed were selected with advice of the National Association of Home Builders and the distributors with the help of State associations of retail lumber dealers. No attempt was made to sample dealers and builders by size, geographical location, or other criteria often used for opinion surveys. The only criterion used was that the firms or persons at the cities visited have had extensive experience with all types of insulating material and, therefore, would be likely to have an interest in the subject of insulation board.

Most of the builders and distributors interviewed had no strong feelings regarding relative quality of the various brands of insulation board. If a builder

TABLE IV—INSULATION BOARD: IMPORTS AND EXPORTS, ANNUAL, 1946-53[1]

ITEM	1946	1947	1948	1949	1950	1951	1952	Jan.-Nov. 1953
	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet	1,000 square feet
Exports	40,263	63,882	41,500	46,096	41,247	53,102	43,154	41,079
Imports	2,003	3,749	236	25	6,415	7,966	9,978	11,018

[1] Where data were shown on a poundage basis, they were converted to square feet by using the factor 1 pound = 1.31366 square feet. Thickness not specified in data source.

Data from Census Report No. FT110, "U. S. Imports of Merchandise for Consumption" (34) and No. FT410, "U. S. Exports of Domestic and Foreign Merchandise" (33).

TABLE V—INSULATION BOARD INDUSTRY: DAILY PRODUCTION CAPACITY, 1938-41 AND 1948-53

PRINCIPAL RAW MATERIAL USED	1938	1939	1940	1941	1948	1949	1950	1951	1952	1953
	QUANTITY[1]									
	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.	1,000 sq. ft.
Wood	2,906	3,308	3,308	3,825	5,500	6,203	6,604	6,577	6,670	6,670
Bagasse	1,778	1,778	1,778	1,778	2,624	2,624	2,649	2,624	2,624	2,624
Others[2]	313	318	318	358	486	486	670	670	723	723
Total	4,997	5,404	5,404	5,961	8,610	9,313	9,923	9,871	10,017	10,017
	PERCENTAGE									
	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent
Wood	58.2	61.2	61.2	64.2	63.9	66.6	66.6	66.6	66.6	66.6
Bagasse	35.6	32.9	32.9	29.8	30.5	28.2	26.6	26.6	26.2	26.2
Other[2]	6.2	5.9	5.9	6.0	5.6	5.2	6.8	6.8	7.2	7.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Thickness not specified in data source.
[2] Mostly licorice root, straw, hemp, wastepaper.

Computed from data in "Lockwood's Directory of the Paper and Allied Trades" (*13*) and "Post's Paper Mill Directory" (*21*). Capacity for 310-day year—24 hours per day.

needs insulation board, he usually orders it without caring from which raw material it is made.

Table VI summarizes the opinions and comments of the persons interviewed. Some of the quality differentials referred to by these persons are related to the influence of the raw materials, others to methods of manufacture. As will be noted, there were a few differences of opinion among some of the persons interviewed regarding relative quality of boards produced from bagasse and competing raw materials. For instance, five persons thought that bagasse board had superior structural strength, and two thought that the manufacturers of bagasse board did a better job of asphalt impregnation of the sheathing type board. Wood boards were judged by two persons as having greater nail-holding strength, and four persons viewed the wood board as being superior in appearance.

The point made most often was that there is no significant quality difference between various boards presently on the market. Distributors and users pointed out that, consequently, their decision regarding which brand of board to handle at a particular time is based on factors other than quality. Principal among these factors were personal friendship between salesmen and buyers and the dealer service and other merchandising assistance provided by the board producer. Seldom was price differential mentioned as an important influence. The persons interviewed indicated that in general there is no price differential between the various brands of boards.

[1] Weber, C. G., and Weissburg, S. G. 1939. Building Materials and Structures, Properties of Some Fiber Building Boards of Current Manufacture. National Bureau of Standards Rept. B. M. 813, 5 pp.

Relative Effectiveness of Merchandising Activities of Manufacturers

Users and distributors of building board were asked to evaluate the relative effectiveness of the sales programs of the various manufacturers. Most of the insulation board manufacturers sell a variety of building materials. To many of these firms insulation board is not as important from the point of sales volume as other items, and merchandising emphasis is placed on other products. Bagasse board producers, on the other hand, are largely in the insulation board business.

Judging from the comments of the users and distributors of building material, the bagasse board producers have a more complete promotion program for insulation board than other manufacturers in the field. All producers have competent salesmen calling on distributors and large builders; but bagasse producers conduct, in addition, a rather aggressive promotion program aimed at individual home users. Some dealers indicated that the consumer demand created by these activities helped them merchandise bagasse insulation board.

Market Competition From Products With Similar End Uses

The principal products which present important competition to insulation board are gypsum wallboard and other types of insulating material. Sales of the principal types of gypsum board from 1946 through the first nine months of 1953, are shown in Table VI. As with insulation board, production seems to have leveled off in recent years after rapid immediate postwar growth, and prices are continuing strong.

Various types of insulating material complete with insulation board, the most important of which is probably mineral wool. The latest information available on the production of mineral wool insulation by uses is included in the "Census of Manufacturers, 1947." In 1947, about 773,000 tons of mineral for building insulation, and about 75,000 tons were shipped for insulation of installed industrial equipment such as boilers and ducts. In addition, 108,000 tons were transported for installation as an integral part of equipment such as refrigerators and hot water heaters at $79,094,000 compared to $150,664,000 in 1950, $134,128,000 in 1951, and $138,305,000 in 1952. Prices on mineral wool are not quoted in Government or trade publications.

Plywood and hardboard also compete with insulation board for certain uses such as interior wallboard.

TABLE VI—Insulation board: Opinions of builders and distributors as to the relative quality of the boards made from various raw materials, April 1953

Opinion	Chicago Ill.		Little Rock Ark		Atlanta Ga.		Jacksonville Fla.		Jackson Miss.		Mobile Ala.		Chattanooga Tenn.		Washington D. C.	New Orleans La.	TOTAL
	Bldr.	Dist.	Bldr.	Dist.	Bldr.	Dist.	Bldr.	Dist.	Bldr.	Dist.	Bldr.	Dist.	Bldr.	Dist.	Dist.	Dist.	
Wood board better because—	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
More effective asphalt impregnation of sheathing	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Leaves cleaner cut when sawed	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
More sag resistant	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Greater nail holding strength	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	2
Smoother appearance of interior board	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Acoustical board has neater appearance because holes bored more neatly	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Harder surface	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Unpainted board has more attractive appearance	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Bagasse board better because—																	
Greater structural strength	—	—	1	1	—	—	—	—	—	—	—	1	—	1	1	—	5
More effective asphalt impregnation of sheathing	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	2
Less expansion and contraction	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Sheathing has better appearance	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
No quality difference	—	1	—	1	—	1	—	1	—	1	1	1	1	1	—	—	9
Don't know	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1

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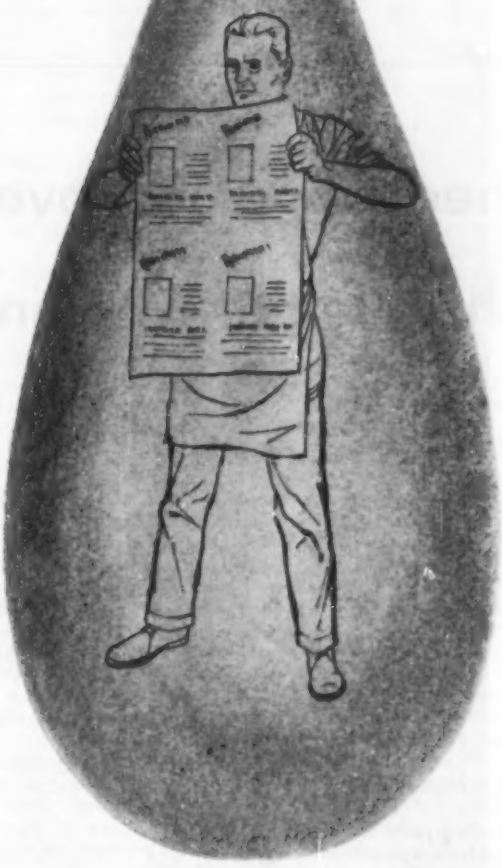

NEW **POLYCO 350-W**

A 40% Butadiene, 60% Styrene latex developed particularly for the paper coating industry . . . for machine or off machine coatings. Clear, almost water-white films . . . tolerates high clay loadings . . . stable to multivalent ions and abrupt pH changes. Outstanding mechanical stability and minimum color change on long exposure to sunlight. High water resistance and dimensional stability for offset printing.

NEW **POLYCO 556-W**

A 33% Butadiene, 67% Styrene latex for applications where more rigid coatings are required . . . outstanding compatibility with starches, clays, casein. No viscosity drift of coating compositions on long term storage.

Write to address below for samples and additional technical information.

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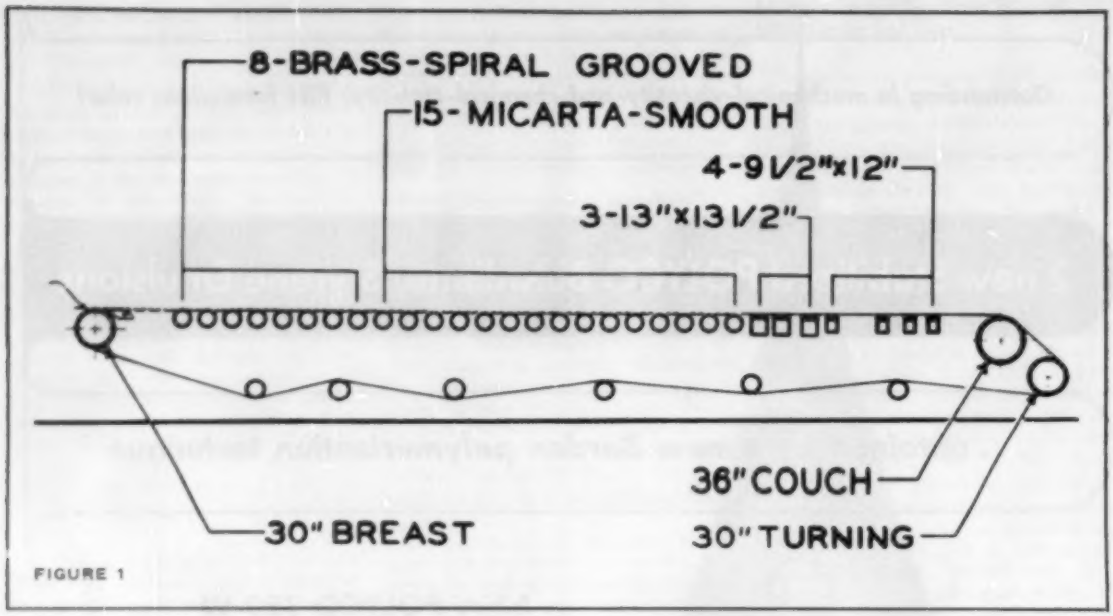


FIGURE 1

What Crossett Learned About Grooved Table Roll On A Light-Weight Machine

A. W. Duskin and A. C. McCaughan

Asst. Paper Mill Superintendents, Crossett Paper Mills, Crossett, Ark.

As all papermakers know, one of the principal factors affecting sheet formation and drainage on the fourdrinier wire is the table rolls. It is the purpose of this paper to describe some of the problems encountered with various combinations of grooved and smooth table rolls, to relate the effect of these combinations on sheet properties, and to describe a table roll arrangement that is working satisfactorily on a high-speed light-weight kraft machine.

The Original Wet-end

When the light-weight fourdrinier machine was designed for Crossett, the basic specification was for a machine to operate at a maximum speed of 2000 feet per minute, having a long wire with a large forming area. These features, combined with a vacuum pick-up and clover-leaf-type dual press section, helped insure a safe running high-speed light-weight paper machine.

To achieve a large forming area, an extremely long space was built in between the breast roll and the first table roll (8 ft. 4 in.). This space was followed by eight wire-wound spirally grooved brass table rolls, and they, in turn, by fifteen smooth Micarta-covered table rolls.

The wire-wound spirally-grooved brass rolls are constructed of brass with a 3½ in. solid face on each end. The center portion (17 ft. 9 in.) is grooved spirally with a 0.0625 in. groove ⅛ in. deep. A wire (actually a ½ in. x 0.0625 winding type) is wound into this groove, making a continuous groove across the roll, front to back, ⅛ in. deep, 0.0625 in. wide, and spaced so that there are five grooves per inch of roll face.

In addition, two four-inch forming boards were placed between each table roll. This arrangement carried the stock well down the wire, keeping the fibers in suspension long enough to get a good felting of the fibers before the dry line on the boxes was reached.

The fourdrinier was 216 inches wide. Its 43-foot forming section was one of the longest ever designed. This fourdrinier layout is shown in *Figure 1.* Starting from the pressure type headbox, the principal dimensions are:

Breast roll—30 in. OD x 20 ft. 3 in. long

Table rolls — Eight brass wire-wound spirally-grooved, each 12⅞ in. OD x 20 ft. 10 in. long

15 Micarta-covered smooth rolls, each 12-3/16 in OD x 20 ft. 10 in. long

Suction boxes — Three — each 13 in. x 13½ in. x 23 ft. 3 in. long (12 in. cover)
Four — each 9½ in. x 12 in. x 23 ft. 3 in. long (8 in. cover)

Couch roll — 36 in. OD x 20 ft. 7-11/16 in. long

Turning roll — 20 in. OD x 20 ft. 5/6 in. long

Wire rolls — 14 in. OD x 20 ft. 6¾ in. long

This was the start-up position of the rolls. It was not changed for the first two years of operation. Using this arrangement, machine speeds of up to 1935 feet per minute were obtained on 30 lb. bag paper. However, 1450 feet per minute was the maximum speed for converting kraft grades where mullen and density specifications had to be met.

At this time, a close examination was made of the sheet. Although formation was good, the sheet contained an excessive quantity of pin holes. It was further noted that a decided "jump" prevailed on the paper machine wire at the position where the transition occurred from the last grooved table roll to the first smooth roll.

This "jump" (or spray of stock and water) was small at speeds in the 1300 foot range. But, when 1700 to 1800 was reached, the spray was two or three feet high.

It was agreed by all who observed this jump that it was caused by excessive water being carried around the first smooth roll and then thrown back through the wire. Also, that the formation was being disturbed at this point—and was possibly the cause of the numerous pin holes in the sheet.

Experimental Work

To substantiate the theory that an excessive quantity of fines were being lost at the first smooth roll, causing pin holes and lowering mullen test, water drainage tests were made. These tests were made as follows:

One-half gallon samples of white water were taken from every table roll at about a foot in from the edge of the wire. The fines in the white water were collected on a filter paper, dried overnight at 220° F. in an oven, and weighted in a stoppered weighing bottle. An average of five filter papers were used for a tare weight.

Eight galvanized steel boxes were attached below rolls 2, 5, 8, 9, 12, 15, 18 and 21. Each box caught white water from its table roll and the accompanying forming board. The dimension of the box parallel to the rolls was 12 inches, except for boxes on rolls 2 and 5. These were made six inches longer to keep the water from overflowing the box.

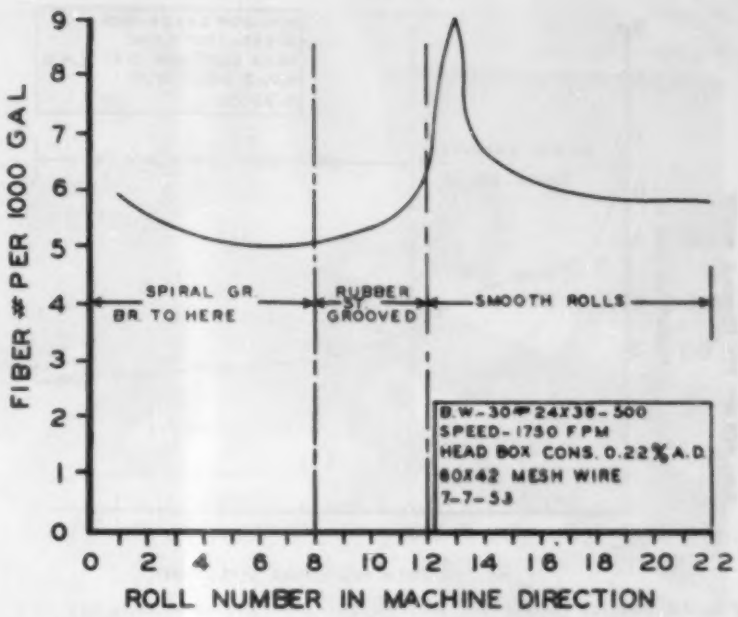


FIGURE 2—Fiber content and water removal with different types of table rolls.

The boxes were set back from the edge of the fourdrinier frame four feet. A three-inch pipe attached to the boxes brought the water to the edge of the frame. To measure the flow rate, a six-foot section of three-inch pipe was screwed into the pipe attached to the boxes. A 55-gallon drum was shoved under the stream of white water. The time to overflow this drum was measured with a stop watch. The fiber content and flow rates were made simultaneously. No measurements were made unless the machine had been running smoothly and steadily for at least one hour.

The pounds of fiber removed at the table rolls gradually decreased from the first grooved roll, to and including the last grooved roll. Then, the quantity suddenly increased from about six pounds to nine pounds per 1000 gallons at the first smooth roll, and gradually decreased again. One series of tests made on the water draining from the table rolls is shown in *Figure 2*. Note that the water draining from the table rolls is shown in *Figure 2*. Note that the water draining from the grooved rolls contains less fines than the white water from the smooth rolls. These figures confirmed our assumption that fines were being lost at the point of "jump."

In trying to correct this fault, the arrangement of the grooved and smooth rolls on the fourdrinier table was changed after three of the smooth rolls had been rubber-covered and grooved with a straight fin. Some of the combinations tried (starting with the roll nearest the breast roll) were:

1. Three smooth rolls (lowered), eight brass-grooved rolls (up), three rubber-covered grooved rolls (up), four smooth rolls (down), four smooth rolls (up).

This combination gave a saw-tooth effect to our drainage graph with peaks at rolls 15 and 19.

2. Three smooth rolls, eight brass-grooved rolls, three rubber-covered grooved rolls, eight smooth rolls (all rolls up).

This combination made one peak at roll 15, but of twice the magnitude of the peaks in condition (1).

3. Three rubber-covered grooved rolls, eight brass-grooved rolls, eleven smooth rolls. This combination made the peak or jump at roll 12.

Regardless of where we placed the rolls, and irrespective of the position of the smooth rolls, we always got the "jump" at the point of transition to the smooth roll. The magnitude of the jump increased as we moved the smooth rolls toward the slice.

The All-Grooved Table

Based on these drainage tests, and, in order to eliminate the "jump" on the wire, it was decided to change all of the smooth table rolls to grooved rolls. This was accomplished by using two spare table rolls. By twos, the rolls were removed, covered, grooved and installed. This procedure was rather slow and gradual; but, by November 1954, the fourdrinier contained all-grooved rolls.

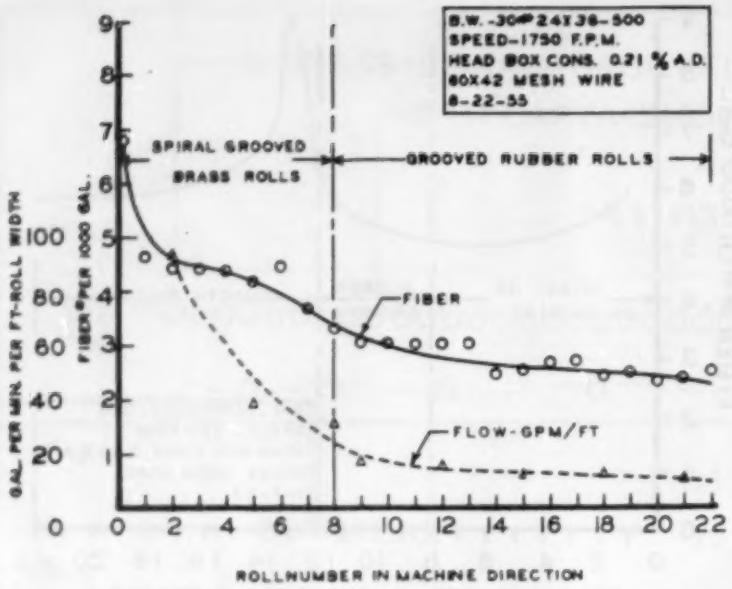


FIGURE 3—Fiber content and water volume from all-grooved table roll fourdrinier.

The Micarta smooth rolls were all recovered with bone-hard rubber, grooved 3/8 in. deep with five straight grooves per inch, each fin being 0.0645 in. wide. The grooved face of the roll was 17 ft. 9 in. with a 3½ in. solid face at each end. This solid face is quite important in that it prevents the edge of the wire from being caught in the grooved section of the roll. Therefore, the completed fourdrinier contained the eight original spirally-wound brass-grooved rolls, and fourteen straight-grooved, hard rubber, straight fin rolls.

Results

After the change to all-grooved table rolls was made, no particularly outstanding features were noted in formation, test or machine operation. Favorable results, however, did show up later. The most noticeable change was the elimination of the "jump." Also, during the month of November 1954, a record speed run was made. We operated for eight hours on 30 lb. bag paper at 2024 feet per minute without a break. At the time the run was made, we were at the top limit of speed for the electric drive.

Figure 3 shows the fiber content of the water draining from the all-grooved table roll fourdrinier, and also the water volume. These tests were made in the same manner as the tests of 1953 shown in *Figure 1*. Note that the drainage curve and the consistency curve are smooth and unbroken, and with no sudden peak as we had before.

Since the record speed run of last November, we have increased our average speed on all light-weight grades. On 20 lb. kraft, we are now running consistently at 1600 feet per minute; on 25 lb., 1700 feet per minute; and on 30 lb., 1800 to 1850. These figures are not "speed run" figures, but are average monthly figures. The gradual increase to these levels is shown on *Figure 4*. Although there are some other factors that no doubt have contributed to these higher speed levels, we feel that the changes in the table rolls have played a big part in the accomplishment.

In addition to an increase in average speed for all grades of light-weight kraft, we also have noted a slight increase in mullen test. For 25 lb. converting kraft, made at the same speed and machine conditions, the average mullen test for 1955 is 4.2 percentage points higher than the same weight, grade and speed made in 1953. This increase in Mullen also substantiates our drainage test data; because, if more fines are actually being retained in the sheet, an increase in mullen should follow.

In checking back on our records, another favorable result is that we have been able to increase speeds on 30 lb. asphalting kraft from 1350 in 1953 to 1550 in 1955. On 30 lb. converting kraft, speeds have increased from 1400 to 1550; and on 30 lb. bag and wrapping kraft, from 1700-1750 range to 1800-1850 range.

In summary, the advantages that Crossett has obtained from all-grooved table roll fourdrinier on a light-weight kraft machine are:

1 — Elimination of formation disturbing "jump" on the wire.

2 — Increased machine speed.

3 — Increased mullen test.

4 — Decreased loss of fines from the sheet, and reduced pin holes.

We feel that the results obtained are peculiar to a light-weight high-speed machine, and that grooved table rolls are a solution to one of the many problems confronting the papermaker.

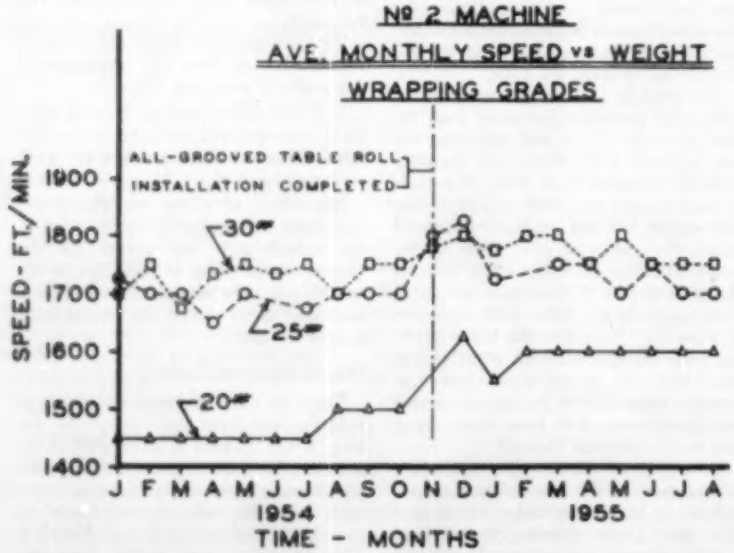
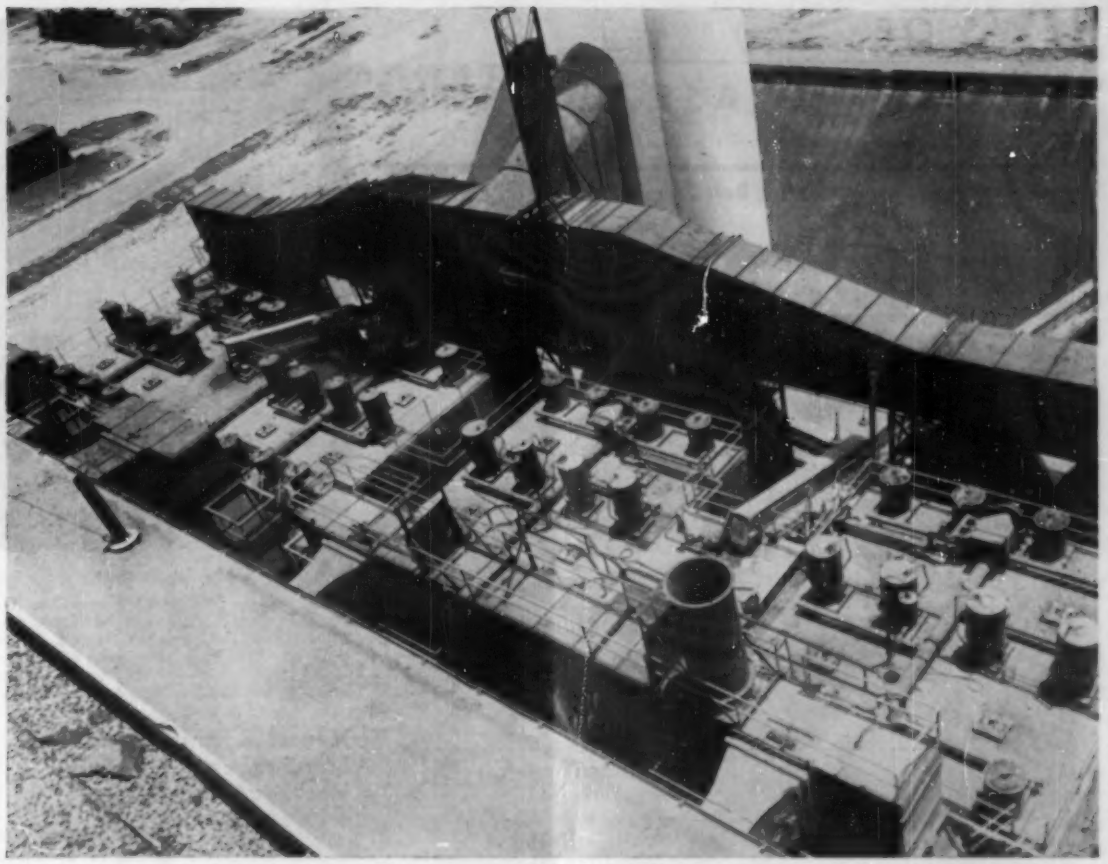


FIGURE 4—Increased speed obtained on various grades with grooved table rolls.

Presented before the joint fall meeting of the Southern & Southeastern Divisions of the Superintendents Div. on October 3-7, 1955.



International Paper Co. gets high-efficiency recovery of valuable solids . . . with Koppers Electrostatic Precipitator

In its Natchez Kraft mill, International has two Koppers black-liquor precipitator installations. Both of these (one completed in 1950, the other in 1952) consist of two double-chamber, tile-shell, scraper-bottom black-liquor units.

In addition, International has a similar installation at its Panama City, Florida, mill. All show high-efficiency recovery of valuable chemicals. Recently, International awarded Koppers an order for a new precipitator installation for its Bastrop, Louisiana, mill.

Over the years, performance records established by Koppers Precipitators have merited industry-wide confidence. And such confidence is well placed. Koppers Engineering "know-how," its extensive research facilities, its experience in problem analysis . . . all make for satisfactory service. Of course, every gas-cleaning problem is different and requires its own individual analysis and solution. Keep Koppers' ability to serve you in mind. Call on Koppers when you need assistance. The coupon below is for your convenience.

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NEWS OF ASSOCIATIONS

Superintendents Local Meeting Dates

Date	Division	Place
Jan. 12	Joint with Kalamazoo Valley TAPPI	Hotel Harris Kalamazoo, Mich.
Jan. 26	Miami Valley	Manchester Hotel Middletown, Ohio
Jan. 27	Connecticut Valley	Roger Smith Hotel Holyoke, Mass.
May 18-19	Pacific Coast Joint with TAPPI	Gull Lake Country Club Kalamazoo, Mich.

TAPPI Local Meeting Dates

Date	Section	Place
Jan. 6	Empire State Central Dist.	University Club Syracuse, N. Y.
Jan. 9	Chicago	Chicago Bar Assn. Chicago, Ill.
Jan. 10	Empire State Metropolitan	Fraunces Tavern New York, N. Y.
Jan. 10	Lake States	Northland Hotel Green Bay, Wis.
Jan. 10.	Pacific	Engineering Meeting Everett, Wash.
Jan. 12	Ohio	Legion Hall Middletown, Ohio
Jan. 12	Empire State Northern Dist.	Hotel Woodruff Watertown, N. Y.
Jan. 12	Kalamazoo Valley	Hotel Harris Kalamazoo, Mich.
Jan. 20	Empire State Eastern Dist.	Queensburg Hotel Glens Falls, N. Y.
Jan. 20-21	Southeastern	Francis Marion Hotel Charleston, S. C.
Jan. 26	Delaware Valley	Engineers Club Philadelphia, Pa.
Feb. 1	Empire State Western Dist.	Prospect House Niagara Falls, N. Y.
April 6	New England	Roger Smith Hotel Holyoke, Mass.

Cola G. Parker

NEW NAM PRESIDENT — Cola G. Parker, retired chairman of Kimberly-Clark Corp., is the newly elected president of The National Assn. of Manufacturers. He succeeds Henry Ritter III, president of Thomas A. Edison Inc.

Hensel Appointed APA Logging Engineer for Northeastern Region

The American Pulpwood Assn. has appointed, effective December 1, James S. Hensel as Northeastern Logging Engineer, replacing W. H. DeRosier, who resigned on August 1.

Mr. Hensel comes to the APA from the New York State Ranger School at Wanakena, where he has served as Assistant Professor since 1946. A graduate of the New York State Ranger School, Hensel received his B.S. degree in forestry from the University of Michigan, and his M.F., from the State University of New York. His practical experience prior to 1946 included work as an assistant woodlands manager dealing primarily with pulpwood procurement and supervision of pulpwood operations.

Consideration is being given to moving the office of the Northeastern Logging Engineer from Gorham, N. H., to Portland, Maine. The exact location has not yet been definitely established, but notice of it will be made as soon as possible.

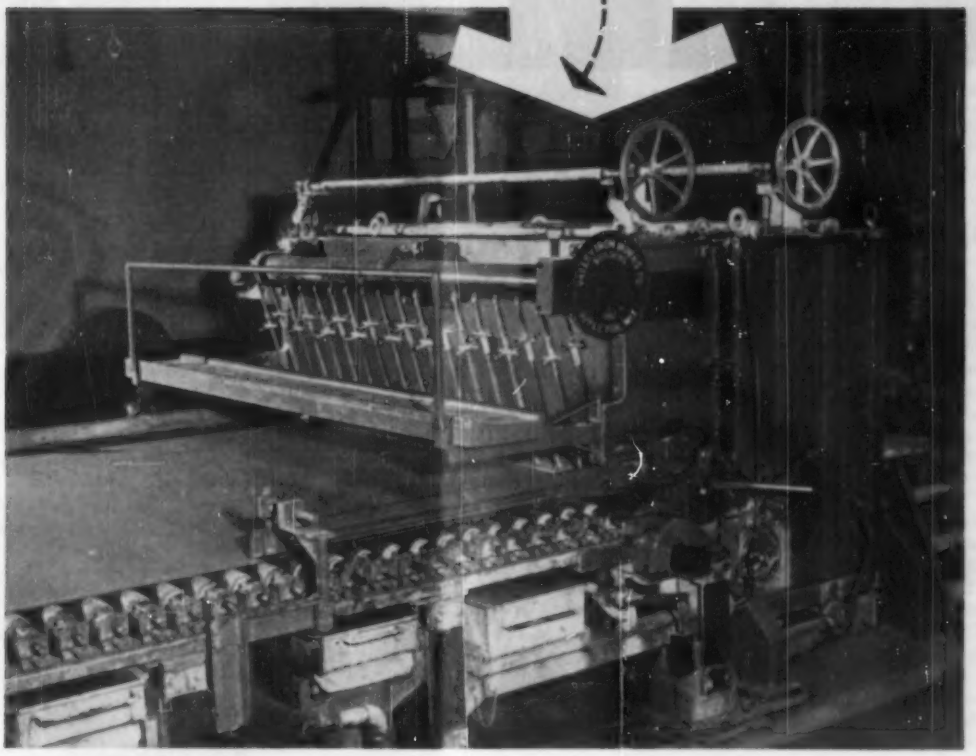
The field staff of the APA Logging Engineers is now comprised of:

Southern Logging Engineer, J. A. Holekamp at Sylacauga, Ala.; Lake States Logging Engineer, H. M. Shepard at Wausau, Wis.; and Northeastern Logging Engineer, J. S. Hensel.

EASTERN CORPORATION

installs another VALLEY

No. 1 machine at Bangor, Me.



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NEW OFFICERS OF PACIFIC SUPTS.—L-R: Jack V. Savage, rear (Crown-Zellerbach) first vice-chairman; Max A. Bailey (Westminster Paper Co.) chairman; Henry Dauterman, (Longview Fibre Co.) second vice-chairman; R. Burke Morden (Morden Machines Co.) secretary-treasurer, and F. R. Hamilton (Everett Pulp & Paper Co.) third vice-chairman.

Pacific Superintendents Meet In Tacoma

Members and delegates of the Pacific Coast Division, American Pulp & Paper Mills Superintendents Assn. held their annual fall meeting at the Winthrop Hotel in Tacoma, Wash., December 1, 2 and 3, with Max A. Bailey as convention chairman.

Following registrations Dec. 1, a number of delegates visited local plants of St. Regis Paper Co., West Tacoma Newsprint Co., Simpson Logging Co., Hooker Electrochemical Co., Pennsylvania Salt Mfg. Co.

During afternoon of December 2 a group meeting, presided over by Henry W. Dauterman of Longview Fibre, was highlighted by presentation of papers by G. L. Burgon, Canadian Forest Products, Ltd., New Westminster, B. C., whose talk dealt with "Hardboard;" Velden M. Anderson, Fir-Tex Insulating Board Co., St. Helens, Ore., who discussed "Stock Preparation for Insulating Board;" Ralph Brownhill of MacMillan & Bloedel, Ltd., Harmac Pulp Division, Nanaimo, B. C., who presented a paper dealing with "Wood Preparation and Chip Handling at Harmac."

During the group meeting Saturday morning, presided over by Jack V. Savage, Crown Zellerbach Corp., Dr. Dee L. Snyder, Industrial Counselor, Tacoma, pointed out the essentials of "Education, Training and Ability Required of Young Men Entering the Industry." Dr. Snyder's talk followed that of Arthur J. Haug of Scott Paper Co., Everett, Wash., who discussed "Supervisory Training," while Reginald Haight of Crown Zellerbach Corp., Camas, Wash., did an illustrative talk on "Methods of Indoctrinating and Introducing Men into the Industry."

The annual business meeting of the Pacific Coast Div., with Max A. Bailey of Westminster Paper Co., chairman of the div., presiding, held election of officers on December 3. Max A. Bailey was re-elected division chairman. Jack V. Savage of C-Z Corp., Camas, Wash., was upped from second to first vice-chairman. Henry W. Dauterman, Longview Fibre Co., Longview, Wash., was elevated from third to second vice-chairman, and F. R. Hamilton of Everett Pulp & Paper Co., Everett, Wash., the only new officer, was elected third vice-chairman of the Division. R. Burke Morden of Morden Machines Co., Portland, Ore., was re-elected secretary-treasurer.

The group voted to set aside $1,500 for scholarships, setting up a minimum amount of $150 for each student chosen. Scholarships are to take in the Washington and Oregon states areas, with the British Columbia area to be taken under consideration for at least one scholarship annually as a minimum for that district.

A resolution to invite the California mills into the Pacific Coast Division, was approved and passed also. Members felt, however, little hope of getting California to join their group, because of the relatively small number of mills in that area.

During the afternoon panel and group discussions on sulphite pulping and papermaking were held. Sulphite pulping discussions were presided over by Hugh Wicket, Pulp Div. Weyerhaeuser Timber Co., Longview, Wash. Participating in them were G. Emerson, C-Z Corp., Port Townsend, Wash.; L. D. McGlothlin, C-Z Corp, Camas, Wash.; and F. Thompson, Weyerhaeuser Timber Co., Pulp Div. Springfield, Ore.

Einar Walloe of MacMillan & Bloedel, Ltd., Nanaimo, B.C., who was to participate in the panel discussions, was unable to attend.

T. H. Grant, Publishers' Paper Co., Oregon City, Ore., presided over a discussion on "Sulphite Pulping" held later in the Evergreen Room of the hotel.

The discussion on "Papermaking" was held in the Army-Navy Room and was presided over by Robert Riley, C-Z Corp., West Linn, Ore. A paper entitled "Bauer Cleaner Operation at West Linn," was presented by C. E. Ackley, C-Z Corp., West Linn, Ore., and another was presented by Russell Goodwillie, Beloit Iron Works, Portland, Ore., entitled "Trends of Paper Machine Design."

Following the panel and group discussions the delegates ended their annual meeting with an informal banquet in the Crystal Ballroom and a dance in the Wedgewood Room on Saturday evening.

Kay Fralick, Morden Machines Co., was convention secretary.

Assigns 1956 Bolton Essay Contest Topic

News is revealed jointly by John W. Bolton & Sons, Inc. and American Pulp and Paper Mill Superintendents Assn. of the subject for the Ninth Bolton Award essay contest: "Here's What I Want From My Work" is the subject selected for the 1956 competition.

As in all previous Bolton Award competition, cash prizes are donated by the Bolton company to the authors whose papers are judged outstanding in the value, interest, and originality of the contents, and in the excellence of their presentation. Two teams of judges from widely separated geographical areas will serve to render impartial study to all essays entered, with no knowledge of author identification.

Cash prizes, amounting to a total of $3,650, will be presented to the top ten national papers in the following manner: $1,000, first prize; $750, second prize; $500, third prize; and, seven prizes of $200 each.

Similar to established custom, all prize winning papers, together with photographs of the authors, are assembled in bound volumes and distributed throughout the industry as a contribution to the knowledge of subjects of timely and widespread interest.

The Bolton Award is open to all employees of North American pulp and paper mills. It is not confined to the membership of the Superintendents Association. Length of papers should be held to approximately 1,500 words, and typed, double-spaced, on one side of 8½" x 11" sheets. The author's name, name and location of mill and position is to appear only on a cover sheet attached to the essay.

All entries must be postmarked not later than midnight, March 31, 1956, and mailed to the Secretary-Treasurer, American Pulp and Paper Mill Superintendents Association, 327 South La Salle St., Chicago 4, Ill. All contest papers remain the property of John W. Bolton & Sons, Inc., Lawrence, Mass.

OHIO PAPER QUEEN OF 1956, Miss Jonnie Broughton, with John L. Clouse Sr., Chairman of Ohio TAPPI Education Committee.

Students' Night at Ohio TAPPI

More than 400 high school science students crowded the Dayton Engineers club auditorium on November 28 to hear members of the Ohio TAPPI education committee present the story of paper and potential job and career opportunities in the paper industry.

Much had preceeded the meeting and results met all expectations, according to TAPPI educaton committee spokesmen. Ohio TAPPI let loose with a barrage of press releases before and after the meeting in an effort to get the public interested. It was understood from the beginning that many public relations benefits could be derived from the meeting and the committee's overall program.

"Students' Night" itself was an unusual undertaking from many aspects: The idea and the details of its execution were new to the Program's sponsors; it was the first time that a local TAPPI section had engaged in such an activity and it was also the first time than an individual industry had collectively presented such a program in the area. It was a look at the future; an attempt to assure technical help for the area's paper industry in the years to come.

At the Smorgasbord . . . The Young (and Not-So-Young) Unexecutives Take On Fuel

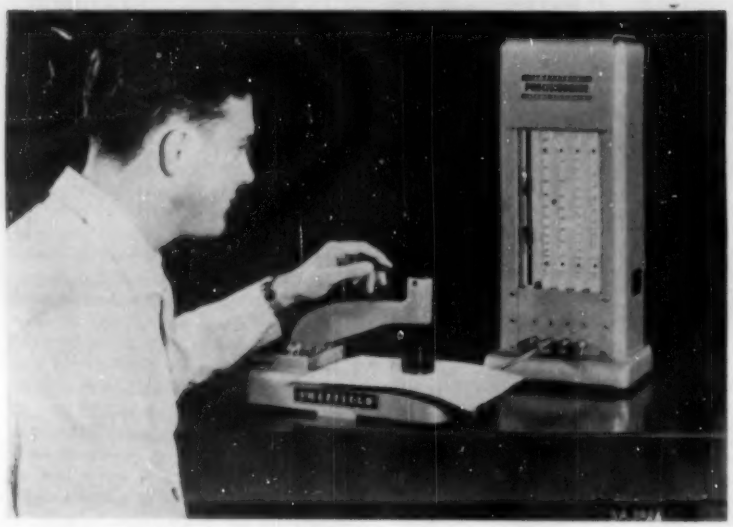
The Unexecutive Pulpmen's Association met Monday, Dec. 12 for an annual Christmas Smorgasborg luncheon, at which Scandinavian delicacies were eaten and much merriment made. Only requirement necessary for membership is a lack of title. T. J. Salb was elected new Chairman of the Board; E. Bullard, Pres.; B. Brown, V.P.; and S. McDermott, Treas.

President T. J. Salb acted as master of ceremonies at the fourth meeting since the organization's founding. A financial report was given and an investigation was immediately launched as it was noted that several officers were driving Cadillacs and were beginning to dress and act like executives, reason enough for suspect in an organization which stipulates its members be nobodies.

Stanford Researchers May Found Forest Products Lab

The director of the Stanford Research Institute recently revealed at the local Superintendents meeting in Tacoma, Wash. that his organization is studying plans for a "several hundred thousand dollar" forest products research laboratory to be located in the Northwest. The spokesman was Dr. Jesse E. Hobson.

NEW EQUIPMENT AND SUPPLIES



Tester for Quick Porosity Measurement

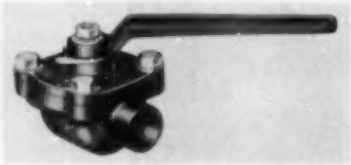
The air resistance or "porosity" of paper can be measured quickly and accurately with a new type gage manufactured by The Sheffield Corp., Dayton 1, Ohio. Called "Porosimeter," the product is designed to inspect paper ranging from non-porous to porous filter paper. Readings are instantaneous with range and accuracy beyond TAPPI specified Standard No. 460-M49, and a very close correlation of readings exists between the gage and current suggested standard methods. No special skills are required to operate the gage, and an 11" x 11" paper sample can be completely explored within less than 60 seconds.

The gage consists of a precision device in which a standard paper sample is clamped between two heads through which air is directed, and an instrument for measuring the flow of air through the paper. The latter is a free-flow type of air gage.

The air flows through the air gage and then through passages in the base of the testing device and up through a large orifice in the center of the lower gage head. A rubber "O" ring in the lower head acts as a seal against edge leakage and assures that all the air actually passes through the paper. The upper gage head has a number of drilled holes in a brass plate through which the air exhausts to the atmosphere.

To check porosity, the operator clamps the paper sample between the two heads and reads the position of the float in the glass column. The scale reading of float height is the measure of the rate of air flow through the paper. The greater the flow of air through the paper, the higher the float position, and thereby the greater the porosity. With no flow of air, meaning no porosity, the float will not rise. The float reaches its proper position in the tube practically instantaneously, regardless of the degree of porosity of the paper sample.

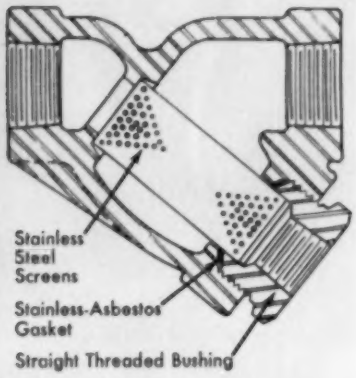
Models are said to be available to cover all requirements.



Top-Entry Ball Valve Is Versatile

Rockwood Sprinkler Co., 38 Harlow St., Worcester 5, Mass., has just placed on the market its new top entry Full Round Flow Ball Valve. The item is said to feature fast, low-cost change in direction of shut-off, interchangeability of seat material without removal of the valve from the line, and a new stem design that allows the handle to be placed in any of eight positions.

Valve seat can be furnished in Buna-N, Neoprene, Kel-F, Teflon, or Nylon. Made of bronze, the valve body is recommended for handling hazardous liquids, as well as water, oil and gas. More details are contained in bulletin Top B.V. SM10-55, available from the publisher.



Y-Type Pipe Strainers for Heavy Duty Use

Armstrong Machine Works, Three Rivers, Mich. has developed six sizes of carbon moly steel strainers in addition to its present line of cast semi-steel strainers. The new Y-type pipe strainers for oil, gas, air, water and steam lines are suitable for pressures to 900 pounds and temperatures to 900 degrees F. Maximum pressure at 100 degrees F. is 1800 p.s.i.g.

The strainer products are available in ½ inch through 2 inch sizes, either screwed or socket weld. Sizes 1¼ inch, 1½ inch, and 2 inches have bolted retainer plates. Smaller sizes have straight thread screwed bushings. Stainless steel screens are standard, either .045 inch diameter holes, 226 per sq. inch, or 24 by 110 wire mesh. Other screening material is available to meet customers requirements.

A stainless-asbestos gasket, which is locked in between the body and the base of the bushing, is included in the design, and helps to eliminate any chance of a blowout.

Emergency Lights Offer High Power & Light Weight

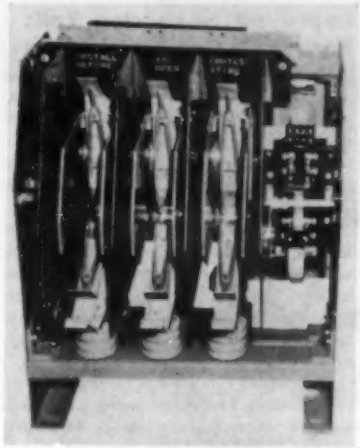
An emergency lighting unit, which uses hermetically sealed nickel-cadmium life-time batteries, is the new product of Dynaseal Lighting Corp., 5 Hadley St., Cambridge 40, Mass.

The product weighs 13½ lbs. and is considered much lighter than similar lights of equal capacity. Dimensions of the unit are 17 x 7 x 11½ inches. Each emergency lamp is fully guaranteed for

10 years, and will operate efficiently at temperatures ranging from 25 degrees below zero to 145 degrees above.

Unit mounted lamp assemblies, or with power remotely located for multiple lamp installations, are available. AC power cords, terminal boards, and switches are included with the unit.

The emergency light source is turned on automatically if power fails. The special batteries, which charge themselves when not in use, are said to give many years of service.



Space Savings Featured In High Voltage Contactor

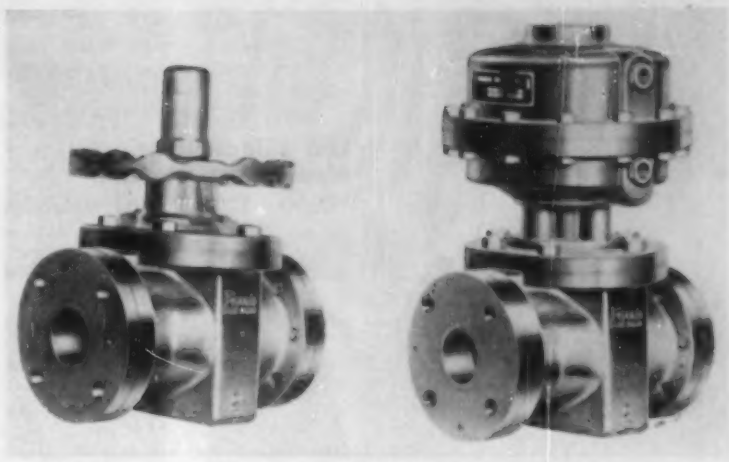
A high-voltage, air-brake contactor, approximately 25 per cent smaller than the previous model, has been announced by General Electric Co., Schenectady 5, N.Y.

The new contactor provides reductions of about 7 inches in height, two inches in depth and nearly one inch in width. It is available in 200 and 400 amp. ratings, at 5000 volts with either AC or DC magnets.

Front-connected, the contactor can be mounted on wheels for simplified installation. All normal inspection and maintenance can be performed from the front without removing the contactor from its enclosure and without disturbing the wiring. No special tools are required. Barriers may be removed by taking out only one screw located in the front of the unit.

Both removable and stationary tips are interchangeable and require only one type for spare part stock. Tip life is rated at 10 to 20 times that of oil contactors on equivalent duty.

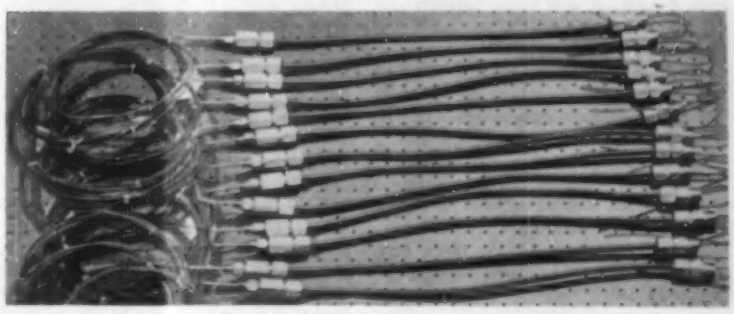
The impulse rating for the unit is 60 k.v. The contactor is available in several forms which include "normally open", and "normally closed" poles. Poles are also built as a compact unit for dynamic braking purposes.



Completely-Sealed Flexible Valve

A completely-sealed, metal-enclosed flexible valve capable of operating under pressures as high as 250 p.s.i. has been developed by the Farris Flexible Valve Corp., 524 Commercial Ave., Palisades Park, N. J. The new valve design, called "Superseal," is said to provide safer operation by an exclusive method of sealing all movable parts as well as the valve body.

The new valve incorporates a self-aligning drive to pinch off the sleeve body for positive tightness. Light hand wheel torque (above, left) provides easy manual operation. Superseal can also be fitted with a diaphragm motor (above, right) for instrument-operated automatic control in throttling, on-off, or remote control applications. A suitable connection provided for pressurizing the space between the flexible body and the cast housing makes possible equalization of pressure for ease of operation. Various sources of pressure can be used, such as an accumulator, an inlet tap or, more commonly, plant air supply.



Flexible Tubing in Factory-Assembled Units

New Conax Flex-tube Assemblies have just been introduced by the Conax Corp., 7811 Sheridan Dr. Buffalo 21, N. Y. These assemblies include neoprene covered flexible tubing which are factory assembled with end fittings having standard male or female pipe thread connections for quick, easy installation and neat appearance.

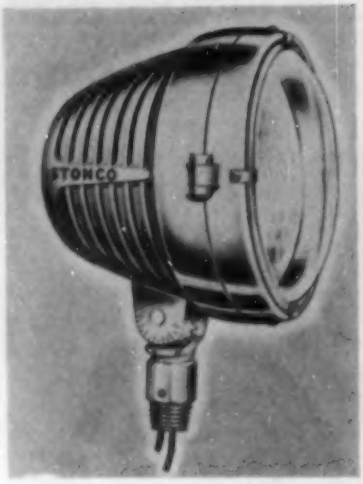
The units shown above are assemblies equipped with packing glands at right and thermocouple glands at left with coils of tagged lead wires.

The Underwriters' Laboratory approved tubing is galvanized steel or brass, interlock construction with an overall neoprene cover. This construction is said to give permanent leak-tight and vapor-proof protection against oil, grease, water, dirt, chemicals, corrosive fumes and other destructive agents.

The assemblies are made in several standard lengths and are available in any required length for special application.

Standard end fittings are cadmium plated of brass or steel, or Conax stainless steel packing glands can be provided in place of end fittings. Many special adaptations to standard and special thermocouple glands are available completely assembled at factory.

For complete information on these new Conax Flex-tube Assemblies write to the Conax Corp., for Bulletin 55-FT.



Yard Light Offers Long Life, Distance

An outdoor floodlight producing 115,000 candlepower with only a 500 watt rating has recently been announced by Stonco Electric Products Co., Kenilworth, N. J.

The unit concentrates its entire light output in an oval-shaped high-intensity beam that is said to be especially effective in long-range floodlighting of freight yards, piers, and plant yards.

Construction of the product is heavy-duty, non-corrosive, precision cast aluminum throughout with heavy internal and external cast ribs which provide twice the normal heat dissipation surface area, and double the cooling rate from this one feature alone. Lamp life is stated at 2,000 hours or double the normal life of general service lamps in average use.

The lamp is cradled in a high-temperature rubber cushion-seal that protects it from shock and abuse, and is sealed rain-tight and water-tight by a heavy-duty cast aluminum hinged cover ring with heat-tempered clear, spred, or colored lenses.

Perforator-Feeder Unit Is Automatic

A new automatic slot perforating machine which combines both perforator and feeder in a single unit, has been introduced by F. P. Rosback Co., Benton Harbour, Mich.

The machine is built in two sizes, for handling sheets up to either 30 or 36 inches. Speed per hour ranges up to 12,000 perforated sheets, depending upon the size.

The perforator unit will handle stock from number 9 manifold to postcard weight. Different heads may be selected to do standard slot perforating, snap-out (knife cut) perforating, or scoring or creasing.

Minimum spacing between lines is 7/8 in. The minimum sheet size is 6 X 6 in. The product will do either continuous or "strike" perforating. Burr rollers are automatically self-adjusting.

Log Skidder Has Many Improvements

A new FWD Blue Ox rubber-tired skidder designed to skid, tow, haul or winch out logs and pulpwood in a single unit operation without trailing or arch, is announced by Four Wheel Drive Auto Co., Clintonville, Wisc.

With driving power in all four wheels, the unit can skid two cords of pulpwood, 800 feet of hardwood, or up to 1,500 feet of softwood at the rate of 5 m.p.h. over rough terrain, and 10 m.p.h. over a fair skidding road. When not dragging a load, the product may be driven from job to job at speeds of 45 m.p.h.

A larger engine and new transmission, front spring slipper mounts which permit front wheels to oscillate up to 18 inches vertically, a redesigned integral rear A-frame, and a restyled alloy steel frame for better balance are some of the main new features of the product.

The tow vehicle has standardized low-pressure 14.00 x 20-inch, 12 ply rubber tires with 72-inch tread.

Trail bulldozing is unnecessary with the skidder, the manufacturer states, as its high ground clearance and continuous positive ground traction from four driving wheels allows it to operate over very difficult terrain.

Operating costs for the unit are said to range as low as 35 to 40 cents per hour. Maintenance costs are less than half those of a crawler tractor. The unit is simple to operate, and requires no special instruction.

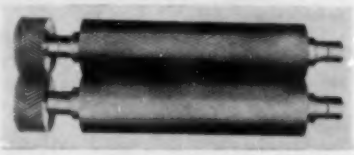
A SD-240 six cylinder engine, with valve-in-head design, which develops 131 b.h.p. at 3800 r.p.m. and 208.5 ft. lbs. torque at 2000 r.p.m., is incorporated as the power plant. The transmission includes one reverse and five forward speeds with one power take-off opening.

Suspension fastens the forward end of the front springs to the frame in the usual manner, but the rear end of the springs slides freely in a saddle that pivots in the middle of the chassis frame, permitting the springs and either of the front wheels to oscillate vertically.

A heat-treated manganese steel alloy frame provides extra strength for woodland operation. The A-frame has been designed with a larger throat at the top, permitting an easy pass-through of choker chains.

The skidder weighs approximately 9,500 lbs, with calcium chloride in the tires. The wheelbase is 90 inches. Twelve-volt electrical system is standard.

Front and rear mounted winches are available as optional equipment. The vehicle has solid mount rear axle to assure complete stability in side winching. Heavy-duty steering includes a 22-inch steering wheel. The driver seat is hydraulic-spring, and a redesigned rectangular gas tank allows complete visability.



Improved Embossing Rolls Permit Faster Production

Recent improvements in embossing sheet materials are reported to be expanding the uses of these materials. Improvements are attributed to new techniques in producing precisely matched steel embossing rolls and to an increase in speeds of embossing machines.

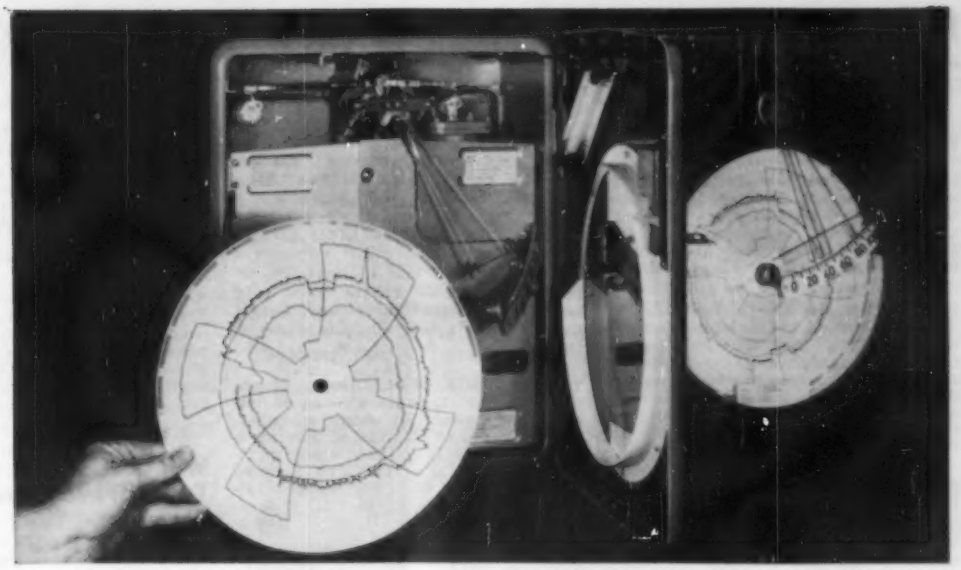
Three-dimensional patterns, textures, figures, and motifs of unlimited variety are being impressed in sheet metals, leather, plastics, paper, glass, textiles, and other materials to decorate them and to change their texture, stiffness, rigidity, or strength.

Progress in this art has resulted largely from making better embossing rolls. This depends upon the availability of forged steel rolls having sound, uniform metal, particularly at the surface, which responds uniformly to the production of an impressed pattern under a rolling die, and case hardens uniformly when subjected to precision methods of flame hardening.

Under new precision methods of engraving, Modern Engraving & Machine Co., Hillside, N. J., produces perfect mates in forged steel rolls. Forged and machined rolls ready for engraving are supplied by Standard Steel Works Division of Baldwin-Lima-Hamilton Corp. in sizes ranging up to 20-in. diameter and six feet long. Rolls up to 12 feet in length are supplied in smaller diameters.

Production of the perfect mates means that the most complicated design is matched, cleared, and crowned to emboss on one or both sides. Fractured and distorted engravings have been virtually eliminated. Similarly, scale, soft spots, and distortions have been eliminated by a new machine method of flame hardening under automatic control.

It will speed the reply to your inquiry to mention Paper Trade Journal.



Faithfully yours -

Clear, Continuous Records without Poisoning . . . on the New Bailey Recorder

★ Faithful chart records of measured variables are the key to a meaningful, dependable analysis of operating trends and conditions. Money spent for more accurate metering, for faster response, is money down the drain—*unless* it's matched with chart records that are equally accurate.

That's why these features of the new Bailey Recorder are important to you:

1. Bailey's exclusive sealed capillary-action inking system maintains continuous flow to the pen tip, and traces sharp, opaque, quick-drying records. "Poisoning" of intersecting records is practically eliminated; no blots or smears during operation or chart changing.

2. Pens are mounted on concentric centers, trace on parallel time arcs only 42/1000" apart. This simplifies analysis of two or more records.

3. Interchangeable plug-in receiver units permit practically limitless record-grouping combinations.

Write for Product Specification E12-5 and actual chart sample.

ONLY BAILEY OFFERS ALL THESE ADVANTAGES IN A SINGLE RECORDER

- Pre-calibrated plug-in receiver units
- Up to four pneumatic or electronic receivers —or two receivers and two integrators
- Any four variables on one chart—easily read and interpreted
- A full year's ink supply at one loading
- Faster shipment—from stock
- Minimum inventory of parts
- Minimum instrument investment for process cycle expansion or alteration

BAILEY METER COMPANY
1056 IVANHOE ROAD
CLEVELAND 10, OHIO
Controls for Power and Process

Controls for
TEMPERATURE
PRESSURE
GAS ANALYSIS
FLOW LEVEL
RATIO DENSITY

NEW LITERATURE

ECLIPSE "RED BAND" SCOTCH TYPE STEAMBOILER PLANTS. (Bulletin A-1041) Tells how the unit is ready to produce steam as shipped from the factory. Also discusses operating characteristics with recommendations for application. **Eclipse Fuel Engineering Co.,** 1105 Buchanan St., Rockford, Ill.

EXPANSION JOINT FOR PNEUMATIC MATERIALS HANDLING SYSTEMS. (Data Sheet Wd) Includes information on application, construction and installation. Also provides cutaway drawings and dimensional data for each expansion joint. **Allen-Sherman-Hoff Co.,** 259 E. Lancaster Ave., Wynnewood, Pa.

ENGINEERING AND APPLICATION DATA. (Revised Booklet 2008-L.) Describes in detail stresses developed in various type tracks used for overhead materials handling systems. Also covers problem of track peening and its solution. **Cleveland Tramrail Div., Cleveland Crane & Engineering Co.,** 8088 E. 289th St., Wickliffe, Ohio.

HOW TO TEST CORRUGATED BOXES. (Booklet 11). Acquaints producers with the importance and techniques of package testing. Also describes and illustrates individual checks to which boxes are subjected and defines testing terminology. **Hinde & Dauch,** 407 Decatur St., Sandusky, Ohio.

LIQUID LEVEL TRANSMITTER, TYPE 13LA PNEUMATIC. (Bulletin 13-22) Lists complete specifications and dimensions in addition to diagrams showing principle of operation and suggested installation layout. **Foxboro Co.,** 38 Neponset Ave., Foxboro, Mass.

LORD LATTICE MOUNTINGS. (Bulletin 701) Describes features designed to solve problems of low frequency, high amplitude vibrations in heavy industrial machinery. Also provides complete dimensions, capacity data and applications. **Jayme Organization, Inc.,** 3091 Mayfield Rd., Cleveland 18, Ohio.

M & T CHEMICALS AND OTHER PRODUCTS. (Bulletin C197R) Describes characteristics and uses of line of chemicals and other products derived from tin, antimony and zirconium. Also offers technical advice and assistance in solving problems. **Metal & Thermit Corp., Chemical & Metals Dept.,** 100 E. 42nd St., New York 17, N.Y.

PROCESS PUMPS. (Bulletin 7094-B) Includes design features, dimension tables, cross sectional and installation views in addition to two-page chart showing interchangeability of parts. **Ingersoll-Rand Co.,** 11 Broadway, New York 4, N. Y.

SALT & WATER, POWER & PEOPLE. (109p. Book) Interspersed with numerous illustrations, this book tells the story of Hooker Electrochemical Co. and was written to celebrate their 50th anniversary. **Hooker Electrochemical Co.,** 4708 Buffalo Ave., Niagara Falls, N.Y.

STUDIES IN CENTRALIZED LUBRICATION 1955. (Bulletin) Presents a few case studies that indicate the experience of typical Farval users. Also includes illustrated sales copy. **Farval Corp.,** 3249 E. 80th St., Cleveland 4, Ohio.

THE SIGNODE SEAL. (House Organ-Autumn 1955) Includes articles on latest developments in shipping paper, special handling of rolls of aluminum foil and how RCA designed a new prize-winning corrugated container. **Signode Steel Strapping Co.,** 2630 North Western Ave., Chicago 47, Ill.

THE ISCC-NBS METHOD OF DESIGNATING COLORS AND A DICTIONARY OF COLOR NAMES. (National Bureau of Standards Circular 553) Designed to assist the scientist, businessman and layman to understand the different color vocabularies used in many fields of art, science and industry. Also enables anyone to translate from one color vocabulary to another. Prepared by Kenneth L. Kelly and Deane B. Judd, this is available from Government Printing Office, Washington 25, D.C. Price—$2.00. Foreign remittances must be in U.S. exchange and include an additional one-third of publication price to cover mailing costs.

AMERCOAT PROTECTIVE COATINGS FOR CONTROL OF RUST AND CORROSION. (Catalogue) Describes and illustrates their four basic systems. Also lists properties and typical uses of some Amercoat tank linings. **Amercoat Corp.,** 4809 Firestone Blvd., South Gate, Calif.

B & W PRESSURE TUBING AND PIPE. FOR SUBZERO SERVICE. (Bulletin TB-357) Lists typical applications and includes chart showing properties and characteristics of carbon, nickel and stainless steels. **Tubular Products Div., Babcock & Wilcox Co.,** Beaver Falls, Pa.

HAYSSEN PAPER PRODUCTS WRAPPING MACHINES. (Brochure) Contains illustrated sales copy on latest models of automatic wrapping machines. **Hayssen Mfg. Co.,** Sheboygan, Wis.

MILTRON ROY CONTROLLED VOLUME PUMPS. (Bulletin 855) Details application and operation of new Minus Delta P line for "downhill" pumping of liquids and gases. Also gives specifications and capacities. **Milton Roy Co.,** Station M, 1200 E. Mermaid Lane, Philadelphia 18, Pa.

PERFORMANCE MEASUREMENTS, OILGEAR 'HYTAC' PRECISION DRIVES. (Reprint AB-6. 9-1-A) Covers talk given by Richard E. Davis, chief project engineer and Norbert J. Nitka, engineer, at National Conference on Industrial Hydraulics, October 28, 1955. **Oilgear Co.,** 1560 W. Pierce St., Wilwaukee 4, Wis.

SEGREGATING SLIDE VALVES FOR PNEUMATIC MATERIALS HANDING SYSTEMS. (Data Sheet Ua) Gives installation instructions with dimension drawings and tables, as well as description of application, design and operation of these valves. **Allen-Sherman-Hoff Co.,** 259 E. Lancaster Ave., Wynnewood, Pa.

THIS IS BLACK-CLAWSON. (Brochure) Illustrates steps taken to expand their facilities and services and gives brief outline of the scope of their multi-division activities. **Black-Clawson Co.,** 2nd and Vine Sts., Hamilton, Ohio.

W.P.U.C. Issues Brochure To Improve Waste Paper Stock

The Waste Paper Utilization Council issued last week the first of a series of brochures to the printing industry which calls attention to the problems arising from the inclusion in waste papers of substances that interfere with the use of such waste in the manufacture of paper and paperboard. Distribution is being handled through various cooperative organizations viz: the Printing Industry of America, Lithographic Technical Foundation, Lithographers National Assn., National Assn. of Photo-Lithographers, Book Manufacturers Institute and Business Forms Institute.

Waste paper supplies are threatened by the presence of various plastics, adhesives, coatings, wet strengthening agents and the like that do not disperse in the paper mill stock system or otherwise cause trouble. These materials are necessary to the use of much paper and paperboard and to the widening of their markets. The Council has no thought of discouraging such technical developments. However, it seeks to have users of paper who produce waste, use materials that do not detract from the value of the waste or if "prohibited materials" must be used to see that they are withheld from waste paper stocks. In many cases materials can be modified to render them innocuous without loss of functional properties with the cooperation of the primary manufacturers.

The new brochure is the first systematic attempt to reach directly the generators of waste paper. Since the printing industry is the largest industry contributing to the supply of paper stock it is being contacted first. Other associations whose members generate waste paper are being contacted in a similar way. Manufacturers of chemical products used in treating and fabricating paper products are requested to cooperate as the occasions arise.

OBITUARIES

Frank A. Kleiler, 71, of Milwaukee, Wis., died November 26. He had served for many years as chief plant engineer at the Milwaukee plant of Cornell Paperboard Products Co. He retired from his Cornell position January 1, 1955 after 42 years of service.

James A. Carpenter, 91, a founder and former chairman of the board of the Carpenter Paper Co., died November 30 at his home in Kansas City, Mo.

Starting his career in Chicago as a door-to-door paper salesman, he sold his horse, wagon, and route in 1886 for $615 and moved to Omaha, where he joined two older brothers, the late Isaac Carpenter and Frank Carpenter, who were starting a paper company. James A. Carpenter became vice-president of the firm, which began with quarters in a former livery stable and grew to include more than forty branches throughout the West and Mid-Western states. Three other brothers later became members of the firm.

In 1902, the firm bought the Kansas City Paper House and Mr. Carpenter moved to Kansas City to manage that branch.

Charles W. Bidwell, 68, of De Pere, Wis., secretary-treasurer of the Freeman Paper Co. since it was founded in Green Bay in 1927, died December 5.

An executive of the Fort Howard Paper Co. prior to 1927, Mr. Bidwell was a former De Pere alderman and member of the Police and Fire Commission.

Robert M. Preston, 73, South Hadley, Mass., general superintendent and vice-president of the American Tissue Mills until the closing of that plant a few years ago, died suddenly while driving his automobile on the night of December 6. His death was attributed to acute coronary thrombosis.

Harold S. Stetson, 72, international banker and former executive with Insulite of Finland, a subsidiary of Minnesota's Ontario Paper Co., died recently. During his service with Insulite he lived for seven years in Denmark and Finland.

Spencer M. Holden, 64, a former member of the sales force of the Crocker-McElwain Co. Holyoke, Mass., died December 6 in his home in Garden City, L. I., N. Y. His death followed a long period of illness.

Kennan M. Hutchins, 61, died of a heart attack while playing volley ball at the Boys Brigade building in Neenah, Wis. A resident of Neenah, Mr. Hutchins was production manager of the Neenah Paper Co.

Arthur Havemeyer, 73, retired Holyoke, Mass., paper manufacturer who founded the former Package Paper Co., died Nov. 18 in Boston, from a heart attack.

Mr. Havemeyer retired in 1939 after being associated with the paper industry for many years. He founded the Package Paper Co. in Springfield around 1920 and five years later moved the business to 56 Canal St., Holyoke, where it was located until 1936 when he sold out to the Nashua Corp. of Nashua, N.H.

Frank J. Rugen, 55, chief auditor of the Union Bag & Paper Corp., died of a heart attack on December 9 while in Savannah, Ga.

Wilmot O. Roe, 52, assistant to the president of the Dixie Cup Co., was found dead in bed on December 8. He was stricken with a coronary occlusion. He had led Dixie's post-war expansion program.

Semtile Chip Silos, each 30 ft. I.D. by 78 ft. 2 in. high, Rayonier, Inc., plant, Jesup, Georgia.

Tile Silos

for Storage of Dry Materials

These enormous chip silos, engineered and erected by Stebbins, are steel-reinforced concrete faced inside and outside with vitrified tile. No concrete forms were required—a Stebbins construction method that results in substantial savings.

If you require facilities for storing materials—dry or wet—in large or small quantities—it will pay you to get Stebbins' recommendation. Or if you need corrosion-resistant process vessels, Stebbins' unequalled experience and facilities for the application of linings and the construction of tile can be extremely valuable to you.

Write for Bulletin A-153

SEMCO

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Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. — 1304 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. — CASTLE BLDG., MONTREAL, CANADA

SINCE 1884

Specialists in Design, Installation and Servicing of Linings and Tile Tanks

PRICES OF MATERIALS

Aluminum sulphate:
- cml. bags, c.l. wks. .....cwt. $1.85 / —
- iron-free, c.l. wks. .....cwt. 3.55 / —

Casein, acid prec.:
- dom. sh. pt. c.l. (20 mesh)... 27.00 /30.00
- Arg. ex. dock, duty paid..... 28.00 /28.50
- New Zeal., do. ..... 26.50 /27.50

Caustic soda:
- c.l. wks. solid, 76%.....cwt. 4.50 / —
- flak. & grd. 400-lb. drums, c.l. 4.50 / —
- liquid 50% tanks.... 2.80 / —
- liquid 70% tanks.... 2.90 / —

China clay:
- dom. air-float, c.l. wks. ..ton 10.00
- water-washed, lump, filler..ton 11.00
- coating .....ton 17.60 /40.00
- Imported, ex. ship short tons 20.00 /35.00

Chlorine:
- single-unit tanks, works..cwt. 3.05 / —
- multiple unit, 2-5 cars per yr. 3.92 / 5.12

Formaldehyde:
- USP, inh. dms. c.l. wks..lbs. .0675/ —
- lcl., E. wks. .....lb. .072 /.0725

Lime:
- hydrated bags, wks.....tons 18.71 /20.21

Gum rosin:
- K, M, N, drms, c.l. Savan, cwt. 8.48 / 8.90

Rosin size:
- 70%, gum & pale grds., tank cars, south, sh. pt..... cwt. 7.24 / 7.28

Salt cake:
- dom. bulk, 100% anh. wks. ton 28.00 / —
- imp. f.o.b. Saskatchewan..ton 18.00 / {Cana. {funds

Soda ash:
- light, 58%, bags, wks....cwt. 1.80 / —
- bulk .....cwt. 1.50 / —

Sodium silicate, 40° Be.:
- tank-cars, wks.....cwt. 1.00 / —
- drums, c.l. wks.....cwt. 1.35 / —

(47°) Be. WW.
- tank-cars, wks.....cwt. 1.60 / —
- drums, c.l. wks.....cwt. 1.95 / —

Sodium peroxide:
- dms. c.l. E. of Miss. .....lb. .186
- l.c.l. do. .....lb. .191 / .196

Soybean, protein:
- chem. ind., wks. c.l. bags...lb. .23 / —

Sulphuric acid:
- 60° Be. chys. c.l. wks....cwt. 2.00 / —
- l.c.l. wks.....cwt. 2.45 / —
- tank-cars, wks.....ton 18.60 / —

Sulphur:
- crude, c.l. mines, contract, long ton 26.50 / —
- f.o.b. vessels Gulf.....dn. 31.00 /33.00

Sulphur dioxide:
- liquid, coml. cyl., wks.....lb. .10 / .12
- multi-unit cars .....lb. .053⅓/

Starches:
- corn, multiwalls, c.l. prod. plant:
- pearl .....cwt. 7.13 / —
- white, dextrine .....cwt. 7.55 / 7.90
- chlorinated .....cwt. 8.15 / —
- potato, Idaho, c.l. wks....cwt. 6.75 / —
- East, fr. all. 50 cents cwt.
- potato, Maine, f.o.b. wks. cwt. 5.75 / —

Talc:
- domestic, sacks,
- c.l. wks., N.Y. .....ton 27.00 /32.00

Titanium dioxide:
- anatase, c.l. deld. K, bags..lb. .22½/ —
- l.c.l. deld .....lb. .23½/ —
- rutile, c.l. deld. .....lb. .24½/ —
- l.c.l. deld. .....lb. .25½/ —

PRICES OF FIBERS

MARKET WOOD PULP

Fourth Quarter Contract Prices Per Short Air-Dry Ton

	Delivered Basis		Varying Freight Allowances†		
	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$82.50/ 90.00	‡$60.00/ —	‖$83.00/ 86.00‖	‖$83.00/ 88.00‖	‖$77.50/ 90.00
Kraft, Blchd.	147.00/152.00	150.00/155.00	‖$147.50/150.00‖		
Kraft, Blchd. Hdwd.	145.00/ —		‖$137.50/ —		
Kraft, Semi-bleached	130.00/135.00	130.00/135.00	‖$137.50/140.00‖	140.00/ —	
Kraft, Unbl.	115.50/120.00	115.00/125.00	†115.00/130.00	115.00/145.00	
Sulphite, Blchd. ..	145.00/ —	150.00/ —	*150.00/ —	*150.00/ —	145.00/147.50†
Sulphite, Unblchd. .	125.00/ —	130.00/ —	*130.50/ —	*130.00/ —	
Sulphite, Unb'l. Gl'sn		129.00/ —	†129.00/ —		
Soda, Blchd.	142.50/145.00	142.50/145.00			

‡ F.o.b. Shipping Point. ‖ On Dock Atlantic Ports. * Freight allowed.

NEW YORK RAG MARKET

New Domestic Cotton Cuttings

Delivered Mill Basis

PRICES NOMINAL

	Per 100 lbs.
No. 1 White Shirts	$15.25/$15.50
No. 1 Unblchd. Muslins	17.00/ 17.50
Blchd. & Unblchd. Underwears....	17.00/ 17.50
No. 1 Light Silesias	7.25/ 7.75
No. 1 Light Blue Overalls	9.00/ 9.50
Percales	7.00/ 7.50
No. 1 Light Prints	5.75/ 6.25
Suntan Khakis	6.00/ 6.50
Cottonades	3.50/ 4.00
No. 1 Washables	3.00/ 3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$3.00/$3.50
Cotton Pants & Overalls	2.25/ 2.50
Thirds and Blues, Repacked	1.75/ 2.00
No. 2 Roofing	27.00/ —

COTTON LINTERS

Memphis Market

F.o.b. Oilmills

	Nov. 29 Per 100 lbs
Grade 1 n.a.	
2	$9.10/ $7.70
3 1st cut—felting	7.00/ 5.80
4	5.25/ 4.20
5	3.75/ 3.0*
6	2.65/ 2.50
7	2.50/ —

*Based on 73% cellulose.

Bagging

(Prices to Dealers, F.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.00/$5.25
Foreign Scrap Burlap	5.00/ 5.25
Heavy Wool Tares	6.50/ —
Austr. Wool Pouches	4.75/ 5.25
Domestic Manila Rope	5.50/ 5.75
Domestic No. 1 Sisal Strings	5.00/ 5.50

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point - Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York Dec. 12	Boston Dec. 12	Chicago Dec. 12	Los Angeles Dec. 12
No. 1 Mixed Paper	$16.00/ 18.00	18.00/ —	17.00/ —	14.00/ —
No. 1 News	25.00/ —	22.00/ 23.00	25.00/ —	14.00/ —
Overissue News	25.00/ 27.00	22.00/ 24.00	30.00/ —	14.00/ —
Mill Wrappers	25.00/ 28.00	22.00/ —	20.00/ —	14.00/ —
Old Corrugated Containers	24.00/ 27.00	23.00/ 24.00	30.00/ —	19.00/ —
Super Resorted Kraft Paper ...	40.00/ 50.00	45.00/ 50.00	40.00/ —	45.00/ —
New Double Kr. Ld. Corr. Cuts	40.00/ 42.00	40.00/ 42.50	40.00/ —	35.00/ 40.00
(Semi-chem. medium)	45.00/ 52.50	45.00/ 52.50	45.00/ 52.50	— / —
New 100% Kraft Corr. Cuts ...	55.00/ 65.00	55.00/ 65.00	75.00/ —	45.00/ —
New Br. Kraft Env. Cuts	85.00/ 95.00	85.00/ 95.00	80.00/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	60.00/ 70.00	60.00/ 65.00	70.00/ —	50.00/ —
New Br. Kr. Bag Waste Unprntd	65.00/ 75.00	80.00/ 85.00	85.00/ —	— / —
No. 1 Groundwood Shvs.	35.00/ 45.00	30.00/ 35.00	40.00/ —	27.00/ 30.00
White Newsblanks	75.00/ 80.00	63.00/ 70.00	60.00/ —	65.00/ —
No. 1 Soft White Shvs.	80.00/ 85.00	80.00/ 85.00	75.00/ —	— / —
Hd. Wht. Shvs.	110.00/115.00	110.00/ —	115.00/ —	95.00/ —
Hd. Wht. Env. Cuts	135.00/145.00	130.00/140.00	115.00/ —	110.00/ —
Col. Tab. Cards	70.00/ 75.00	75.00/ 77.00	65.00/ —	44.00/ —
Manila Tab. Cards, bales	95.00/100.00	95.00/105.00	90.00/ —	79.00/ —
No. 1 Col. Ledger	45.00/ 50.00	45.00/ 50.00	50.00/ —	35.00/ -
White Ledger	65.00/ 75.00	70.00/ 75.00	70.00/ —	55.00/ —
Mixed Book & Mag.†	28.00/ 30.00	30.00/ —	22.50/ —	— / —
No. 1 Rep'd. Hvy. Books‡	32.00/ 35.00	33.00/ 35.00	35.00/ —	— / —

† Includes Time & Life; no coarse groundwood. ‡Not to exceed 10% groundwood. ‖ Deld.

NEWS OF SUPPLIERS

C. S. Hancock

• DIAMOND ALKALI CO. reports that Walter R. Roberts, for 20 years manager of silicate sales for the company, is retiring December 31.

Succeeding Mr. Roberts is Clifford S. Hancock, manager of calcium carbonate sales for the past seven years, who will continue in this capacity in addition to taking over responsibility for the sale of all Diamond silicate chemicals excepting detergent silicates, which will now be handled by C. W. Turner, manager of detergent specialty sales. These products include hydrated and anhydrous metasilicate, supersilicate and orthosilicate, which find wide use in metal cleaning, laundry and chemical compounding industries among others.

Mr. Hancock joined the company at Pittsburgh in 1925 as a clerk in the sales department. In 1929, he was promoted to secretary-treasurer of the Pure Calcium Products Co., Painesville, a Diamond subsidiary which was later dissolved and integrated with the parent organization. After two years as plant protection officer, he became manager of calcium carbonate sales in 1948.

• AMERICAN CYANAMID CO., will begin building a liquid alum plant in Plymouth, N. C. according to R. E. Sumner, general manager of the Industrial Chemicals Division. The plant will be of sufficient size to care for the current and expanding needs of the paper industry in Virginia and North Carolina.

The new plant will provide an additional link in Cyanamid's alum producing facilities. The company produces large quantities of sulfuric acid and operates bauxite mines in Arkansas and Georgia. These are the basic raw materials used in the production of alum.

• BAILEY METER CO., has named G. L. Harman, Jr., manager of the Milwaukee district office, to direct the company's Pulp & Paper Division. Mr. Harman will co-ordinate the company's sales activities in our field.

• RADIANT HEAT ENTERPRISES, INC., is a new organization formed by a group of sales and engineering associates until recently with Sill Industries. They are Thomas F. Walsh, sales manager, Chung Shen; Na, textile engineer and, Bruce Boden, all of whom specialize in textile finishing applications. They are currently adding others to the staff and the new sales offices are located at 623 Morris Ave., Springfield, N. J. The company is marketing the electro-ceramic radiant heater designed by Bruce Boden which was introduced to the field in 1953. This heater is the basic unit in the stabilizing, drying and curing systems which RHE builds for the industry.

United... for greater service to the PAPER INDUSTRY

After more than fifty years of successful manufacturing, Bailey & Blendinger joins forces with Lodding for greater service to the paper industry. B & B Knives, distinguished for endurance, and Lodding Doctors and Blades whose quality is reflected in rolls from Coast to Coast, are united for greater service to the paper industry.

B & B DIVISION
LODDING ENGINEERING CORP.
WORCESTER • MASSACHUSETTS

J. R. Rhamstine

W. T. Brady

W. H. Gamble

• CORN PRODUCTS REFINING CO., has announced the elections of John R. Rhamstine as executive vice-president, William T. Brady as first vice-president, and William H. Gamble as senior vice-president.

Mr. Rhamstine, who is financial vice-president of the company and a member of the Board of Directors, began his career with Corn Products in 1934 and served as manager of the Pekin, Ill. plant prior to his appointment as a vice-president in 1947.

Mr. Brady joined the company in 1919 and served as an executive in the Manufacturing Departments, both foreign and domestic, until 1945 when he became assistant to the president. In 1948 he was elected vice-president in charge of manufacturing and became a member of the Board of Directors.

Mr. Gamble, president of Corn Products Sales Co., began his service with the company in 1910. He was appointed western sales manager in 1924 and general sales manager in 1947. He has been a vice-president and member of the Board of Directors of Corn Products since 1948.

• CONOFLOW CORP., Philadelphia, announces an exchange-of-stock agreement between Conoflow and the Walworth Co. As a result of this agreement, Conoflow will become an operating subsidiary of the Walworth Co. effective January 3, 1956.

Conoflow Corp., founded in 1943, manufactures final control elements, including automatic control valves, pneumatic power operators, and air regulation equipment. The merger will provide Conoflow with a broader financial base to expand research and development activities, increase inventory, and acquire additional manufacturing facilities. As an independent subsidiary, Conoflow will operate under the same policies as in the past, with no change in management or personnel. Conoflow will also retain its existing plant, located at 2100 Arch St., Philadelphia 3, Pa., where ample space is available for expansion.

Walworth Co., producer of industrial valves and fittings for more than 100 years, will benefit by realizing a more extensive diversification into the rapidly growing field of automation, used in the process industries, the power industry, and atomic energy development. With executive offices located at 60 E. 42nd St., New York 17, N. Y., the Walworth Co. operates plants in Anniston, Ala.; Boston, Mass.; East St. Louis, Ill.; Greensburgh, Pa.; Houston, Texas; Kewanee, Ill.; Linden, N. J. and Mineola, L. I., N. Y.

• ALLIS-CHALMERS MFG. CO. has appointed Herbert K. Kingsbury as manager of product sales, centrifugal pump section, Norwood Works.

Mr. Kingsbury joined Allis-Chalmers in 1943. He had been an application engineer in the firm's West Allis Works before transferring to Norwood Works in 1952.

Figures of the Week

PAPER PRODUCTION RATIO REPORT —American Paper & Pulp Ass'n. Figures

(Production as percent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

1955	Nov. 5 99.4	Nov. 12 98.9	Nov. 19 99.0	Nov. 26 98.0r	Dec. 3 98.7
1954	Nov. 6 95.6	Nov. 13 95.6	Nov. 20 94.5	Nov. 27 90.7	Dec. 4 95.5

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1954	93.3	94.0	93.1	92.2	93.7	89.3	79.1	92.1	89.8	94.6	93.8	86.2	91.6
1955	93.6	96.6	97.9	98.0	99.3	95.4‡	87.3‡	96.7‡	92.8‡	98.7‡	98.9‡		

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1948	1949	1950	1951	1952	1953	1954	1955
Year to Date	92.9	83.7	96.4	99.7	90.6	93.7	92.1	95.4
Year Average	92.1	83.7	95.8	98.0	88.6	92.3	91.6	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

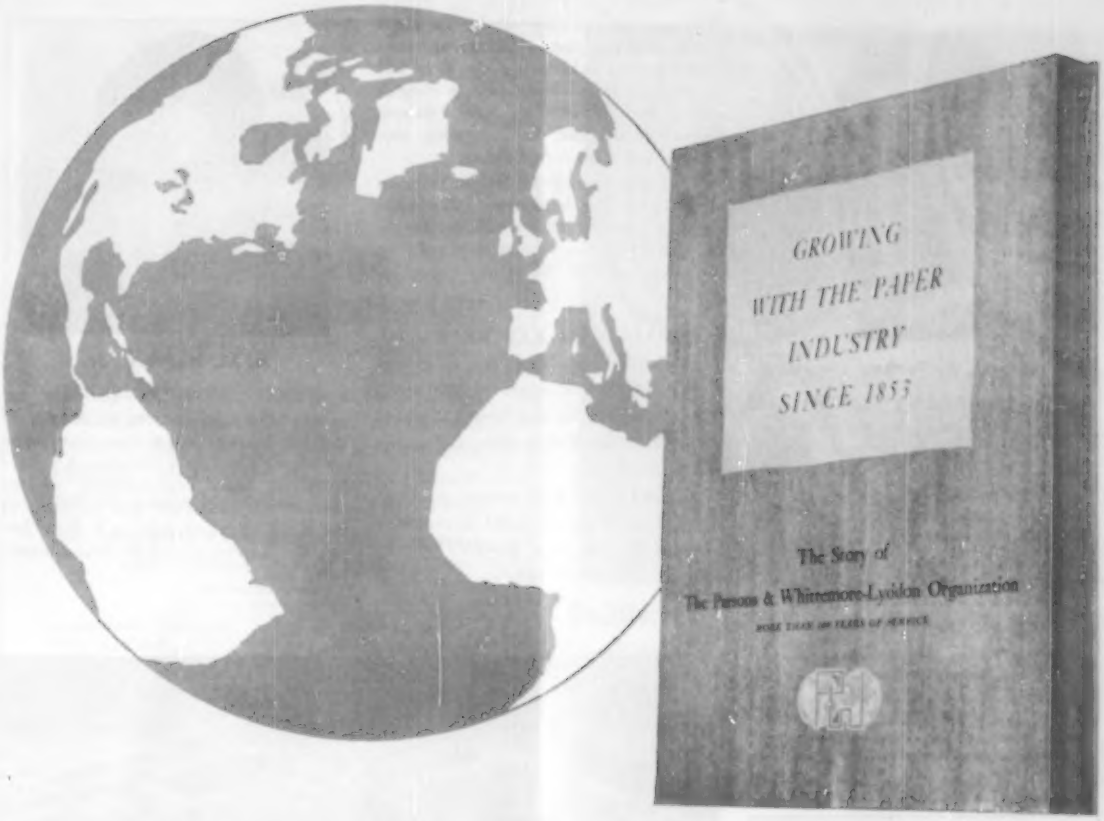
1955	Nov. 5 103		Nov. 12 102		Nov. 19 104		Nov. 26 95		Dec. 3 98				
1954	Nov. 4 95		Nov. 13 94		Nov. 20 94		Nov. 27 88		Dec. 4 87				
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1954	89	89	90	88	90	89	74	92	88	94	93	82	88
1955	92	95	96	94	97	97	84	99	97	102	101		

Note: In the above tables all the ratios shown are on the basis of a normal 6 and 7 day capacity.

† Percents of operation based on "Inch-Hours" reported on a 6-day basis to the National Paperboard Association.

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Ass'n. Figures

ITEM	THIS WEEK ENDING Dec. 3, 1955	LAST WEEK ENDING Nov. 26, 1955	CUMULATIVE TO DATE January 1, 1955 to Dec. 3, 1955
% Activity	98%	95%	96%
Total Production (Tons)	286,926	279,120	12,926,729
Liner	107,597	95,876	4,420,793
Corrugating Material	47,263	44,385	1,985,789
Chip & Filler Board	5,112	6,266	279,124
Total Containerboard	159,972	146,527	6,685,706
Folding	45,972	47,220	2,376,571
Set-Up	12,696	12,982	613,906
Special Food Board	24,725	24,879	1,064,143
Other	43,561	47,512	2,186,403
Total Boxboard	126,954	132,593	6,241,623
Total Orders			
Received	397,989	227,809	
Unfilled At End of Week	654,613	542,397	



New book describes world-wide pulp & paper development services

Here is a book that tells how you can profit by using the comprehensive world-wide services of The Parsons & Whittemore-Lyddon Organization. With more than 100 years of experience, this international organization can facilitate your pulp and paper business development anywhere in the world. "Growing with the Paper Industry" explains these services:

Marketing wood pulp, and *developing new pulp and paper business abroad.*

Testing and research, to determine the suitability of such raw materials as cereal-straw, rice-straw, bagasse, abaca, esparto grass, eucalyptus, bamboo and fast-growing tropical hardwoods, in the making of paper.

Advice about and aid in producing pulp and paper of suitable material anywhere on earth; or redesigning of existing plants; assistance in developing a financial program.

Distributing machinery world-wide for pulp and paper making, as well as for use in the graphic arts.

Providing top management wherever needed for foreign pulp and paper projects.

From building production facilities to marketing pulp and paper anywhere in the free world, this Organization can help you. This new book—and its companion volume "The Mechano-Chemical Process for Production of Pulp from Straw, Bagasse and other Vegetable Fibres"—will tell you how.

Write for your free copies of these books.

THE PARSONS & WHITTEMORE / LYDDON ORGANIZATION

World Leaders in the Development of Pulp Mills for the Use of Bagasse, Straw or Other Vegetable Fibres

250 Park Ave., New York 17, N. Y. **35 New Bridge St., London EC4, England**

J. A. Forbes

• JOHN W. BOLTON & SONS, INC. has appointed John A. Forbes to the sales staff to represent the company and its Emerson Manufacturing Division in the territory including New York State and Eastern Canada. Mr. Forbes succeeds William C. Ferguson, who is now handling special customer service on stock preparation equipment. Additional duties of Mr. Forbes in his new assignment will be those of technical advisor to Pulp & Paper Mill Accessories, Ltd., Bolton-Emerson sales and manufacturing representatives in Eastern Canada.

Mr. Forbes joined the Bolton-Emerson organization in September 1955 after nineteen years of service with the Downingtown Mfg. Co., interrupted only by two years spent in the armed forces.

• HARBISON-WALKER REFRACTORIES CO. has appointed John R. Hewitt as district sales manager of the firm's Boston territory. He had been a member of the Harbison-Walker sales staff in the Philadelphia area.

Mr. Hewitt has held various positions in Harbison-Walker's sales department since 1928. He is a graduate of the University of Pittsburgh.

A. M. Hartley, Jr.

• NOPCO CHEMICAL CO. has announced the appointment of Alfred M. Hartley, Jr. as technical sales manager of the Paper Chemicals Division. A former industrial sales representative of the company in Delaware and in parts of Maryland, Pennsylvania and New Jersey, Mr. Hartley started at Nopco twenty years ago.

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street Boston 10, Mass.

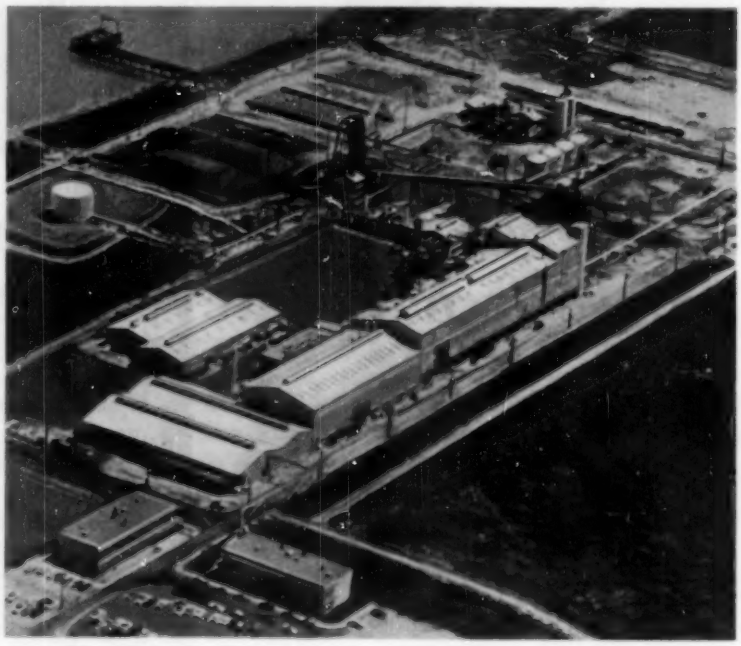
POIRIER CONTROLS
Proven By Test To Be Best

Automatic Controls For
Weight
Consistency
Caliper
Metering
Proportioning
Make Up Water
Level Control
Associated Operations

Let our engineers study your operation and furnish you with complete details on how Poirier Controls will help you as they have others.

No cost — no obligation
Write For Full Information

POIRIER CONTROL COMPANY
Waterville 1, Maine
Specialists in Stock Control Equipment



New Titanium Dioxide Plant

• AMERICAN CYANAMID CO. dedicated its new titanium dioxide plant at Savannah, last week. The production facility which produces the white pigment represents an investment in the neighborhood of $15 million.

Over 400 people attended dedication ceremonies at the plant, including state, local and Cyanamid officials. Principal speaker at the dedication ceremonies was K. C. Towe, President of American Cyanamid Company. Later, the Honorable S. Marvin Griffin, Governor of the State of Georgia, addressed 150 guests at a luncheon.

Titanium dioxide is the whitest pigment yet discovered. Curiously, the basic raw material for this pigment is black titanium bearing ore which is brought to the plant by boat. Titanium dioxide has found wide application in the paint, paper and rubber industries.

WESTVACO BOSTONIC QUALITY

WEST VIRGINIA PULP and PAPER COMPANY

Manufacturers of Printing and Converting Papers

SUPERCALENDERED • POSTER • BOND • COVER
LITHOGRAPH • LABEL • OFFSET • MUSIC • WRITING
EGGSHELL • INDEX BRISTOL • CUP AND CONTAINER
ENVELOPE • MIMEOGRAPH • FILE FOLDER • COATED
ENGLISH FINISH • POSTCARD • MACHINE COATED

KRAFT LINER BOARD • SEMI-CHEMICAL CORRUGATING BOARD
KRAFT CONVERTING AND KRAFT ENVELOPE

MILLS

Mechanicville, New York — Tyrone, Pennsylvania
Luke, Maryland — Williamsburg, Pennsylvania
Covington, Virginia — Charleston, South Carolina

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Avenue, New York 17, N. Y.
35 East Wacker Drive, Chicago 1, Ill. — 503 Market St., San Francisco 5, Calif.

21 SECONDS *to Test Stiffness of Paper and Paper Board*

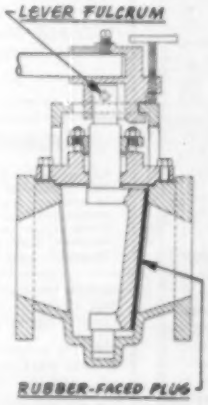
That's all it takes to measure samples up to 0.25" thick with the motorized Gurley Stiffness Tester. It easily handles tissue, newsprint, book, bonds, ledgers, industrial papers, cardboard, carton stocks; and permits a wide range of readings from 1 to 3,358,720.

Precision strip cutter also available. Write for Bulletin 1400, describing complete line of Gurley paper testers.

W. & L. E. Gurley, *520 Fulton Street, Troy, N.Y.*

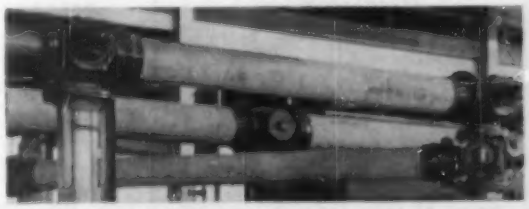
DeZURIK 3-WAY and 4-WAY VALVES

Complicated piping routes can be simplified — very often with great savings — with the installation of DeZurik Easy-Operating 3-Way and 4-Way Non-Lubricated Valves. Furnished in lever, gear and cylinder operated models with single, double or transfer style plugs, DeZurik Valves represent the best solution to intricate installations.



The lever operated, tapered plug DeZurik Valve is designed to permit the plug to be unseated, rotated EASILY to the desired position, and reseated again in one smooth operation. The hinged lever does it! Raising the lever unseats the plug . . . and it turns easily to the desired position. Depressing the lever reseats the plug drip-tight!

DeZurik Easy-Operating 3-Way and 4-Way Non-Lubricated Valves are available in a full range of metals for all mill services. Write for complete details.



DeZURIK SHOWER CO.
SARTELL, MINN.

PAPER TRADE JOURNAL / CLEARING HOUSE

RATES FOR ADVERTISING (PAYABLE IN ADVANCE) $.75 cents per line (6 words to line) minimum charge $3.75 —Additional charge of 70 cents if box number is used

Situation wanted advertisements can be repeated for ½ rate

Space in this section can also be purchased at $5.00 per column inch—(1" x 2¼")

Address replies to advertisements appearing under Box Number in care of

PAPER TRADE JOURNAL, 15 West 47th Street, New York 36, N. Y.

Help Wanted

POSITIONS OPEN

We can place—Board mill supt.; asst. plant mgr. asbestos paper board mfg.; asst. supt. large high speed kraft newsprint paper mill; asst. supt. tissues, bond and board.

Chemists for mills, also for demonstrating and selling; mechanical engineers; maintenance foreman; project engineer for firm building paper and pulp mill mach., to head up development and research work.

Salesmen to sell paper, also mach., finishing materials, adhesives, etc.; chief industrial engineer; time study men; Fourdrinier and Cylinder mach. foremen; machine tenders and back tenders.

SEND US YOUR RESUME. Many attractive positions are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 2-6647
294 Washington St.—Boston 8, Mass.
D-19

PAPER BROKER SALESMEN WANTED

WE WANT MEN EXPERIENCED AT BUYING AND SELLING THEIR OWN TONNAGE. THESE MEN CAN ESTABLISH AND OPERATE SALES OFFICES IN PRINCIPAL CITIES OR WORK FROM HOME OFFICE. EXCELLENT FUTURE WITH GROWING CO. REPLY CONFID. BOX 55-438 CARE PAPER TRADE JOURNAL. TF

SALARIED POSITIONS $5,000 to $35,000. We offer the original personal employment service (established 43 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC., 661 Brisbane Bldg., Buffalo 3, N. Y.
D-19

WANTED PLANT ENGINEER

Excellent opportunity for Mechanical Engineer with Cylinder Board making background. Must have proven record of good organizational and leadership experience. Mill located in New England. Please forward complete resume of education and positions held, stating salary required and date of availability. Reply to Box 55-433 c/o Paper Trade Journal.
D-18

CHEMIST

Graduate Chemist with Board Mill Experience. Some experience on Champion Clay-Coaters preferred. This is a wonderful opportunity for the right person in a Middle-Atlantic Board Mill. Many benefits. Write Paper Trade Journal Box 55-398 giving full resume of age, experience, marital and draft status and salary desired. Address Box 55-398 care Paper Trade Journal. D-26

Help Wanted

PLANT ENGINEER

Only a man who can take full responsibility for maintenance and construction need apply for this position. The man who gets this position will have to get his hands dirty and work long and sometimes unusual hours.

A paper manufacturer in the metropolitan New York area requires a Graduate Mechanical Engineer with some supervisory experience in production or maintenance. Advancement possibilities are excellent and the speed at which the man progresses will be limited only by his abilities. Starting salary open. Resume should include personal information, education and description of positions held including salaries.

Address Box 55-430 Care Paper Trade Journal.
D-18

RESEARCH PHYSICIST

B.S. degree in Physics to assist in design of new instruments and testing equipment and to evaluate preliminary models for performance and final design purposes. Age 25-35. Good salary, usual benefits. Send resume to Personnel Manager, West Virginia Pulp and Paper Co., Luke, Md. TF

TOUR BOSS WANTED

FOR FIVE CYLINDER PAPERBOARD MACHINE IN EAST PALESTINE, OHIO. APPLY, PROCEL, INC., BOX 109, YORK, PENNSYLVANIA, STATING EXPERIENCE AND QUALIFICATIONS.
D-26

RESEARCH ENGINEER

Graduate Mechanical or Chemical Engineer to carry out the development of machinery, techniques and processes based on ideas for new applications of mechanical principles in the pulp and paper industry. Age 25-35. Good salary, usual benefits. Send resume to Personnel Manager, West Virginia Pulp and Paper Co., Luke, Md. TF

PAPER CHEMIST—At least two years experience with paper coatings, adhesives, resins or development of chemicals for the paper industry. Fine opportunity with established chemical firm in large Eastern city. Write fully to Box 55-437 care Paper Trade Journal. D-19

Buy U.S. Savings Bonds

FOR SALE

5 C. I. Dryers 60" D. 80" F. 10" D. journals 75# steam pressure.

1 C. I. Dryer 42" D. 80" F. 10" D. journals 75# steam pressure. This dryer 1½" thick wall, made for scraping cylinder.

6 pairs babbitted bearings size 10" x 18" for above listed dryers.

5 C. I. cut tooth spur dryer gears 140 T—4" F. 2 P 1—3-3/16" B 3—2-15/16" B for dryers.

5 pairs (10) pcs. C. I. Bottom dryer frames for 60" dryers—drilled for bearings and surface faced.

7 Rotex steam joints 1½" inlet ¾" outlet for dryers. (Rice Barton Corporation)

7 ¾" Siphons for above.

1 C. I. chilled Gal. roll 9-3/16" D. 80" F. 2⅝" cored holes 5" D. journals.

3 brass tube rolls 6'-8" F. 4" D. .134 wall with steel shaft extension 1⅛" D. 7" long—C. I. heads.

3 brass tube rolls 6'-8" F. 4" D. .134" wall with steel shaft extensions 1⅛" D. 4½" long C. I. heads.

1 3" thick clear Douglass Fir wooden tank, 7'-6" x 6'-0" wide x 3'-6" deep, inside dimensions 2" brass flanged drain in one end.

1 #6¾ E 4 to 1 ratio, Reeves enclosed horizontal variable speed transmission, complete with motor base and with electric remote control for 60 cycle 3 ph. 220 volt circuit including two push button stations.

1 #4 G 2 to 1 ratio, Reeves enclosed horizontal variable speed transmission with hand wheel control.

1 #2 G 2 to 1 ratio, Reeves enclosed horizontal variable speed transmission with ball bearing countershaft and hand wheel control.

1 Master electric motor 40 h.p. 1150 RPM 60 Cy. 2 ph. shaft D. 2.375" KW ⅝ x 5/16 Frame 444.

Miscellaneous gears, sprockets, union silent chains, etc., for above listed drives.

Following felt rolls made from std. B. I. pipe, welded heads and journals.

3 rolls 3½" O. D. 76" F. 1-7/16" D. journals 11½" long.

2 rolls 3½" O. D. 80" F. 1-7/16" D. journals 8" long.

8 rolls 4½" O. D. 84" F. 1-7/16" D. journal 7½" long.

15 rolls 4½" O. D. 86" F. 1-7/16" D. journals 7" long.

1 rubber covered press roll 9" O. D. 80" F. 2-15/16" D. journals 7" C. I. core 1½" wall thickness 1" thick rubber covering. Durometer 70-75.

1 rubber covered press roll 12" O. D. 80" F. 1⅝" D. journals core 5" F. H. steel pipe. 1" thick rubber, hardness 80-85 Durometer.

1 rubber covered press roll 12" O. D. 80" journals 2-15/16" D., C. I. core, 1" thick rubber, hardness 80-85 Durometer.

42 1-7/16" Pillow block ball bearings SKF SY-107.

6 1¼" Pillow block ball bearings SKF SY-104.

8 1-7/16" Flgd. unit ball bearings SKF—FUS 107.

2 1½" Flgd. ball bearing units SKF FUA-108.

2 2-15/16" Pillow block roller bearings SKF SAF-22517.

2 3-3/16" Pillow block roller bearings SKF SAF 22518.

8 2-15/16" Pillow block ball bearings SKF SAF 1517.

2 2-15/16" roller bearings, Shafer Take-Up units No. ZC-215.

Following starting equipment for 40 h.p. 220/440 volt 3 ph. 60 cycle. Motor 1150 RPM.—Allen Bradley.

1 Bristol controlling Thermometer Recorder-Mod. IT-500 K-2 control.

1 Control valve—Bristol series, size ½" ends screwed action normally open. Body bronze trim S S Needle point type. Service steam at 75# max. press.

1 C. I. Dryer 24" D. 86" F. journals 7⅞" D. with babbitted bearings.

Address Box 55-440 care Paper Trade Journal.
D-19

FOR SALE

BARKING DRUM
1—10′ x 30′.

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54″ x 48″, cast iron tubs, with motors.
Write us regarding your requirements.

BREAKER STACK
1—110″ face 2 roll breaker stack, with frames.

CALENDER STACKS
1—3 roll 30″ face friction Calender Stack (Holyoke), 2 iron rolls, 1 cotton roll and 1 spare cotton roll.
1—4 roll 72″ Calender Stack. (Extra heavy duty).
1—5 Roll 86″, (Heavy Duty)
1—5 Roll 90″.
1—9 Roll—86″ face, Super Calender Stack.

CHIPPERS
1—66″ Murray 6 knife chipper, complete with 300 H.P. synchronous motor.
1—68″ Carthage 4 knife Chipper.
1—96″ Murray 4 knife Chipper—anti-friction bearings.
1—84″ Carthage 4 knife Chipper.

CLASSIFINER
1—Dilts Classifiner, practically new, with motor.

CORE MACHINE
1—M. D. Knowlton tube winder, 94″ face.

CREEPER AND WAXER
1—80″ Creeper and Waxer, excellent condition, details on request.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.

CYLINDER MOLDS
2—30″ diameter x 72″ face.
1—30″ diameter x 92″ face.
2—36″ diameter x 54″ face.
1—36″ diameter x 84″ face.
2—36″ diameter x 86″ face, with vats.
2—36″ diameter x 110″ face.
3—36″ diameterx x90″ face, with 18″ diameter couch rolls.

DIGESTERS
2—14′ Globe Rotary Digesters.

DRIVES
1—Jones 21 H. P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive.
1—Vaughn 100 h.p. enclosed angle drive. Ratio 7 to 1.
2—Cleveland agitator drives, for chests.
3—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 h.p.).

DRYERS
1—Complete unit, consisting of 6 dryers, 36″ diameter x 38″ face, including frames, gears, anti-friction bearings.
5—24″ diameter x 54″ face, with bearings.
1—28″ diameter x 48″ face.
5—28″ diameter x 80″ face with anti-friction bearings.
9—36″ diameter x 44″ face with frames, gears & bearings.
1—36″ diameter x 66″ face.
1—36″ diameter x 67″ face.
15—36″ diameter x 72″ face.
6—36″ diameter x 78″ face.
2—Dryers 36″ diameter x 84″ face, with bearings gears & frames.
1—36″ diameter x 90″ face.
3—36″ diameter x 115″ face, gears and bearings.
1—48″ diameter x 70″ face.
1—48″ diameter x 100″ face.
1—48″ diameter x 106″ face.
2—Dryers 48″ diameter x 134″ face.
1—48″ diameter x 144″ face.
1—62″ diameter x 67¾″ face, bearings & gears.
3—60″ diameter x 86″ face.

DYNOFINER
"Rice Barton," details on request.

EMBOSSING CALENDERS
1—45″ Meadows 2 roll embosser.
1—32″ Cavagnaro 2 roll embosser.
Write us regarding your requirements.

EXTRACTOR ROLLS
1—Extractor roll, 26″ diameter x 104″ face, with rubber couch roll.
1—Rice Barton & Fales Extractor Roll, 28″ diameter x 104″ face, with rubber couch roll.

FELT CONDITIONER
1—160″ Vickery, brand new, complete.

FLAT SCREENS
2—14 plate Packer, roller shoes.

GEARS
Write us regarding your requirements.

GRINDERS
2—4 pocket Grinders.
2—3 pocket Grinders.

JORDANS
1—#4 Emerson Jordan, anti-friction bearing.

LABORATORY EQUIPMENT
1—Marcy Rod Mill.
Write us regarding your requirements.

LAMINATING MACHINE
1—72″ Hudson-Sharp laminating machine, reverse coater.

MOTORS
1—50 H.P. Upright motors, air cooled 3/60/440, 1150 R.P.M. (Ball Bearing).
Write us regarding your requirements.

PRESSES
Write us regarding your requirements.

PRESS ROLLS
1—Chilled iron, chrome plated, 12″ x 100″
1—Chilled iron, chrome plated, 10″ x 74″

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper.
1—Jones Pulp-Master.

PUMPS
1—Shartle Bros. Agiflow circulating pump, 2000 g.p.m., 62 ft. head.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

RAG CUTTERS
1—#20 "Giant" Rag cutter, new, never used.
Write us regarding your requirements.

REELS
1—86″ 2 bowl reel.
1—84″ 3 bowl revolving reel.
1—100″ Rice Barton 2 bowl Reel, heavy duty
1—123″—3 bowl revolving reel.
1—134″—2 drum.
1—72″ Dowingtown Reel, 2 bowl.

REFINER
1—12″ Wiener Refiner.

ROLLS
1—Rubber Couch Roll—20″ diameter x 108″ face.
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#1A Bird, copper vat.
3—#2A Bird, copper vats.
Write us regarding your requirements.

SAVEALLS
2—Sandy Hill, 36″ diameter x 86″ face cylinder molds, anti-friction bearings and couch rolls.

SCREEN PLATES
Bird Rotary screen plates.
Plates (new) for flat screens.
Write us regarding your requirements.

SHAKE
1—Bevis Fourdrinier Shake.

SHEETERS
1—42″ Finlay Sheeter.
1—60″ Hamblet.
1—72″ Hamblet Sheeter.
1—85″ Maxson Sheeter (duplex) layboy, 11 rollback stand.
1—140″ Hamblet (Simplex).
1—81″ Hamblet, simplex, layboy and 10 rollback stand.
1—140″ Hamblet (Duplex).
1—100″ Hamblet Sheeter (Duplex) with layboy, backstand, etc.

SHOWERS
1—Bird showers 98″ face.

SLITTERS & WINDERS
1—42″ Cameron type 24-3A.
1—42″ Cameron—Type 9.
1—52″ Cameron—Type 6.
2—52″ Cameron—Type 10.
1—62″ Cameron (duplex)
1—72″ Cameron—Type 10.
1—40″ Fales Slitter.
2—86″ Two Drum Moore & White, 50″ diameter rewind.
1—120″ Moore & White, 4 drum winder.
1—157″ Cameron—Type 18.
1—169″ Bagley & Sewall, 2 drum, shear cut, 60″ diameter rewind.
2—60″ Kidder.

SLITTING DEVICE
84″—Quick change slitting device shear cut, complete, practically new.

STEAM JOINTS
18—3″ Johnson steam joints (new).

STOCK PUMPS
1—8 x 18 Shartle Triplex.
2—10 x 18 Beloit Duplex, low type.
2—10 x 20 Shartle Triplex.
1—12 x 20 Shartle Triplex.
1—20″ x 20″ centrifugal Shartle, 12,000 G.P.M. (new)
Advise us to your requirements.

SUCTION BOXES
Write us concerning your requirements.

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½″ face x 26″ diameter.

SUCTION COUCH ROLLS
1—36″ diameter x 246″ face, SKF bearings.
1—Downingtown suction couch roll, complete (new) 127½″ face x 26″ diameter.
1—Sandusky Suction Couch Roll 18″ diameter x 98″ face.

SUCTION FELT ROLL
1—Gilbert & Nash 122″ face.

SUCTION PRESS ROLLS
1—Sandusky Suction Press Roll 130″ drilled face x 14⅝″ diameter.
1—Sandusky Suction Press Roll 103″ drilled face x 23″ diameter with roller bearings.
1—Sandusky Suction Press Roll, 83″ face x 22″ diameter. Rebuilt like new.
1—Downingtown Rubber Covered Suction Press Roll, complete (new) 125½″ face x 24″ diameter.

SUCTION PRESS SHELL
1—Beloit rubber covered suction press shell 19½″ diameter x 100″ drilled face.
1—Downingtown rubber covered suction press shell only, 125½″ face x 24″ diameter.

TABLE ROLLS
22—Rubber Covered 10″ diameter x 246″ face. Write us regarding your requirements.

THICKENERS
1—All cast iron vat, 115″ face cylinder mold, anti friction bearings, 18″ couch roll—very good condition.
1—42″ diameter x 146″ face cylinder mold with 16″ diameter couch roll.
Write us regarding your requirements.

TOILET WINDERS
2—72″ Hudson-Sharp (Surface type winder)

TRIMMERS
1—63″ Oswego cutter.
1—96″ Guillotine cutter.
1—44″ Seybold.
1—64″ Seybold cutter.

VACUUM PUMPS
2—L-6 Nash vacuum pumps
2—L-5 Nash vacuum pumps
1—L-4 Nash vacuum pump
1—L-3 Nash vacuum pump
2—#1 Nash Hytor vacuum pumps
2—#2 Nash Hytor vacuum pumps
1—#3 Nash Hytor vacuum pump
2—#4 Nash Hytor vacuum pump

VALVES
6—10″ 3 way DeZurik Dump Valves.
6—12″ 3 way DeZurik Dump Valves.

VATS
3—D. J. Murray Company Vats, iron ends, for 42″ x 120″ cylinder molds, overflow and counterflow.

VIBRATING SCREEN
1—Tyler Niagara Vibrating Screen, practically new.

WET MACHINE
1—72″ Wet Machine.

YANKEE DRYERS
1—90″ diameter x 80″ face.
2—108″ diameter x 72″ face.

Paddy Ross, Pres.
377 Frelinghuysen Ave.*

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Tel.—Bigelow 3-3720

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WANTED—TOUR BOSS for night work on Fourdrinier Board Specialties. Metropolitan New York Area. All benefits. Send resume and salary expected first letter to Box 55-329 care Paper Trade Journal. TF

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GRADUATE CHEMIST
Good background in chemistry, training in chemical engineering, five years experience in research, control and development, initiative, broad interest, experience in fine and specialty papers. Seeks responsible position. Box 55-441 care Paper Trade Journal. D-26

MILL SALESMAN—Wide range, long experience. Fine, coarse papers, converting specialties, etc. Seeking represent paper manufacturer, headquartering New York. Salary or commission. Acquainted with industry over wide area of country. Can be available soon. Address Box 55-425 care Paper Trade Journal. D-19

PRODUCTION EXECUTIVE—Conversion of papers and boards, seeks progressive organization needing man with outstanding ability in all phases of manufacturing; organization; expansion and labor relations. Allied lines. Currently employed. Address Box 55-139 care Paper Trade Journal. D-26

PAPER-PULP SALES EXECUTIVE: Paper-pulp sales executive with wide export-import experience, now earning over $30,000.00 per annum, seeks association with integrated producer. Salary secondary. Can move East, if necessary. Address Box 55-417 care Paper Trade Journal. D-19

SUPERINTENDENT with technical background. Can produce cylinder specialties of high quality on seven or more cylinders. Capable of assuming full charge of all manufacturing operations. Address Box 55-421 care Paper Trade Journal. D-19

CHEMIST—5 years experience in research and product development. Age 29. B.A. Degree from an accredited university. Would relocate in New England or New York State. Address Box 55-431 care Paper Trade Journal. D-19

SUPERINTENDENT—Available January 1st. Competent in production of high quality, at low cost, folding boxboard, food containers, set up boxboard and most other cylinder specialties, from waste papers and virgin pulps. Experienced in every phase of operation and maintenance single or multiple machine mill. Excellent references. Address Box 55-442 care Paper Trade Journal. J-16

For Sale

FOR SALE

72" Hamblet Sheeter.
96" Moore & White Sheeter, 8-roll Backstand and Layboy.
36" Waldron 2-Drum Rewinder.
50" Cameron Type 6 Slitter.
48" Kidder Slitter, two rewind shafts.
48" Masson Layboy and Sheet Counter.
44" Seybold 10-Z Ream Cutter.
57" Dexter Power Cutter.
20 New Fast Flexible Couplings for 2", 2½" & 3⅛" shafts.

Thomas W. Hall Co.
Stamford, Conn. TF

FOR SALE

Yankee drier insurable for minimum of forty-five pounds size ten foot diameter by eleven feet, 132" face ready for immediate shipment, in excellent condition. Address Box 55-408 care Paper Trade Journal. D-19

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IF YOU HAVE SURPLUS MACHINERY FOR SALE

YOU COULD SIGN AN EXCLUSIVE SALES AGREEMENT WITH ONE DEALER—but hardly any dealer is getting away with that old trick anymore.

YOU COULD SHIP IT TO A DEALER ON CONSIGNMENT—but that went out of style with the Model T.

YOU COULD OFFER YOUR MACHINERY TO ALL DEALERS TO BE SOLD ON A COMMISSION BASIS—and then keep your fingers crossed that two or more dealers don't claim the same customer.

YOU COULD MAKE AN OUTRIGHT SALE TO A CASH PURCHASER—the logical, profitable and proven method. It results in immediate disposal and removal from your mill.

YOUR GUARANTEED
CASH MARKET FOR SURPLUS MACHINERY

ROSS PAPER MACHINERY CO.

265 PASSAIC ST., NEWARK 4, NEW JERSEY
Telephone:—HUmboldt 2-2177

FOR SALE

2—Size 24 Blaw-Knox Pulpwood Grapples—like new—excellent condition. Being offered at far below present cost.

1—Jones #31 Repulper complete with reduction gear and 60 H.P. motor.

2—Crane Scales, 22,000 pounds capacity, Fairbanks-Morse, excellent condition.

2—Blaw-Clawson wet lap machines, one 72" and one 96", Completely reworked and like new.

Address inquiries to:
Purchasing Department
The Champion Paper and Fibre Co.
P. O. Box 872
Pasadena, Texas M-12

FOR SALE

1—50C Spiral Paper Core Machine—Hudson Sharp
1—Paper Converting 3-web Dispenser Machine
1—Cranston 76" Undercut Knife
1—Hamblet 49" Roll Sheeter equipped with Reeves Drive
1—Mamco Lay-Boy
1—Mamco Counter & Marker for Hamblet Roll Sheeter
1—Two-way Rapids-Standard PPB-26-20-2—floor to floor—Floorveyor, with scissors lift and controls—(disassembled).
1—Scalping Machine — Sheridan 18"x32" Platen die press
1—Paper Shredder—4"x20", with Feed Roll Twister and Folder

ALL MACHINES EQUIPPED WITH MOTORS. CAN BE SEEN IN OPERATION.

Address Box 55-376 care Paper Trade Journal.
T.F.

FOR SALE

8—Bird 6" Dirtecs with 2" auxiliaries (like new).
4—4" Vortraps, good condition.
125 HP G. E. Steam Turbine with Reducer, 150# inlet pressure, 50# back pressure, mechanical governor, used two years.
1—Gould Centrifugal Pump 160 G.P.M. 293 ft. head.
1—Worthington Centrifugal Pump 3500 GPM, 102 ft. head.
1—Pomona Vertical Sump Pump 750 GPM, 50 HP Motor.
1—Fredrick Centrifugal 2700 GPM, 102 ft. head.
50—Other Pumps from 50 GPM up.
Every item rebuilt and guaranteed.

Osborne Paper Mill Equipment Corp.
Fulton, New York Tel. 2-4254
D-19

MOTOR FOR SALE

25 H.P. Crocker-Wheeler Motor with electronic Vari-"X" Cutler-Hammer automatic control, 1600 R.P.M. to zero, slip ring, 440 volt, 60 cycle, 3 phase. Opportunity to save money. Motor equipment hardly used.

Thomas W. Hall Company
Stamford, Conn. TF

It will speed the reply to your inquiry to mention Paper Trade Journal.

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CABLE ADDRESS
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USED PAPER MAKING & CONVERTING MACHINERY

Humboldt 2-2177

IMMEDIATE DELIVERY FROM AMERICA'S LARGEST INVENTORY OF PAPER MACHINERY

BALERS

1—Buffalo Baling Press—upstroke.

BEATERS

1—Dilts high speed iron tub. Roll 62" dia. x 54" face with 75 HP motor & controls.

CYLINDER MOULDS

3—136" face x 54" diameter—stainless steel covering—with 2 iron end vats.

CALENDER ROLLS

46—Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS

1—Black Clawson 90" 7 roll with 3 spare rolls.
1—Black Clawson 82" 3 roll with doctors.
1—Black Clawson 82" 5 roll with doctors.
1—Farrel Birmingham 124"—9 roll stack—water cooled bearings.

DRIVES

3—Reeves #2F, #3 and #6.
8—Enclosed drives—various sizes.

DRYERS

7—83" face & 36" dia.—frames, gears & bearings.
4—52" face x 48" diameter—gears & bearings.
1—52" face x 24" diameter—gears and bearings.
23—84" face x 36" diameter, with gears.
1—88" face x 36" diameter.
1—104" face x 36" diameter.
1—104" face x 48" diameter.
10—109" face x 42" diameter.
1—110" face x 42" diameter, with bearings.
1—116" face x 36" diameter.
1—116" face x 48" diameter.
15—120" face x 48" diameter with gears, bearings and felt rolls.
1—124" face x 48" diameter.
1—126" face x 48" diameter.
13—127" face x 42" diameter.
1—130" face x 48" diameter.
9—160" face x 36" diameter, gears & bearings.
48—160" face x 48" diameter. Complete dryer section including felt dryers, felt rolls, etc.
36—132" face x 42" diameter with gears, bearings and frames.
18—58" face x 36" diameter. Complete with 2 deck frames, gears, bearings and steam joints and felt equipment.
23—80" face x 36" diameter. Complete with 2 deck frames, gears, bearings and steam joints and felt equipment.
64—46" face x 24" diameter. Complete with 2 deck frames, gears, bearings and steam joints and felt equipment.
24—46" face x 48" diameter. Complete with gears, bearings, steam joints and felt equipment.
4—90" face x 36" diameter, anti friction bearings.

FLAT SCREENS

3—6 plate Sandy Hill roller shoe with scrapers.
2—6 plate Bagley & Sewall with scrapers.
2—12 plate Sandy Hill, anti friction bearings.

JORDANS

1—E. D. Jones pony Jordans 3/16" stainless steel fillings.
1—E. D. Jones Pony Jordan, ball bearing, with stainless steel filling.
1—Smith & Winchester standard with granite filling.
1—Noble & Wood Bull Dog Jordan. Anti friction bearings with coupling and motor base.
1—Appleton #2—anti friction bearings.

KNIFE GRINDERS

1—132" Rogers with motor. Used 5 months.
1—130" Hanchett belt driven complete with coolant pump, and 2 spare wheels.
1—92" Seybold with motor.

LABORATORY EQUIPMENT

1—5 lb. Wood Tub Beater—Complete.
1—Biggs 6' diameter Rotary Digester 100# pressure.

MOTORS

12—125 H.P. Westinghouse synchronous enclosed. Brand new, 440 volt, 720 rpm forced air ventilation with starters.
1—Westinghouse 300 h.p., 388 r.p.m., 440 v., 3 phase, 60 cycle.

PASTING MACHINE

1—80" Pasting Machine, 2 unwind stands, 84" Hudson Sharp 3 roll paster (New 1946). Drying table, dryer section. Complete 23 dryers, 6 roll calender stacks, reel, rewinder.

PULP EQUIPMENT

3—2 ft. x 8 ft. type 300 Tyler Niagara stainless steel Chip Screens.
1—3 ft. x 8 ft. type 300 Tyler Niagara stainless steel Chip Screens.
1—Lannoye Pulper—enclosed drive.

PULP PRESSES

1—Hydraulic Machine Co. 250 tons 30" x 36" platen, 48" daylight, 30" stroke, 16" ram —upstroke. For baling dry pulp.

PUMPS

44—Centrifugal Pumps open & closed impellers.

REELS

1—Pusey & Jones 162" drum reel.
1—Downingtown 104" 2 bowl reel.

REFINERS

1—Dilts Hydrafiner.
1—24" Weiner Refiner—ball bearing.
2—34" Sutherland Disc Refiner, stainless steel discs.

ROLL GRINDERS

1—Lobdell Model 3MB for 30# diameter rolls —19 ft. 6" bed. Complete with crowning device and 15 h.p. main motor drive and 2 10 h.p. motor grinder wheel drives.

ROLLS—PRESS, COUCH etc.

32—Press rolls, brass and rubber covered.
14—Couch rolls, brass and rubber covered.
250—Brass and steel carrying rolls.

ROTARY SCREENS

1—#2 Bird—Copper vat.
2—Bird #3A—Monel Vats.
9—Bird #2A with copper vats.
1—Bird #3A—copper vat—2 motors.

SAVEALLS

1—Shartle cylinder 36" dia. x 122" face with 5 HP motor & enclosed drive.

SHEETERS

1—Cameron 124" quick change double slitter assembly for board sheeters. Complete with 16 pneumatic slitters.
1—Moore & White simplex 114" sheeter with Maxson Layboy, overlapping delivery, 8 roll backstand motor and starter.
1—Hamblet 100" single knife with 2 slitters.
1—Hamblet 81" duplex with Erie Layboy 12 roll backstand and motor.
1—Hamblet 75" with layboy and backstands.
1—60" Hamblet.
2—Hamblet 110" single knife sheeters.
1—Beck 45" sheeter.

SHREDDERS

2—Mitts & Merrill Air Fluff Paper Shredder. Used 9 months.
1—Mitts & Merrill #17-2A paper shredder.
2—Taylor Stiles Giant Stock Shredders, Style 36.

SLITTERS AND WINDERS

1—Cameron 82" Model 10-S. 30" rewind. Equipped with shear cut slitters.
1—Dietz 81" Parent roll backstand—with automatic tensioning device.
1—Cameron 48" Model 6. Fully rebuilt. New machine guarantee.
1—Cameron 42" Model 6.
1—Cameron 169" Model 18—Complete with motor drive and roll ejector.
1—Cameron 194" Model 19. Anti-friction bearings, 2800 f.p.m., equipped with air operated quick change, constant tension and roll ejector.
1—Moore & White 66"—two drum.
1—Cameron 62" Model 6.

STOCK PUMPS

1—Shartle 10 x 20 single plunger pump.
1—Moore & White 10 x 16 Triplex.
1—Beloit 8 x 10 Triplex.
1—Downingtown 8 x 18 triplex, with enclosed drives and motor.

SUCTION COUCH ROLLS

2—Beloit 25" diameter x 114" face, anti friction bearings, with stands. Direct drive.
1—Sandusky suction couch 25" diameter x 128" drilled face.
1—Sandusky suction couch 18" diameter x 122" drilled face.
1—Sandusky 30" diameter x 162" drilled face complete Trunnion Roller Bearing.
1—Sandusky 22" diameter x 135" drilled face trunnion roller bearings.
1—Sandusky 18" diameter x 113" drilled face.

SUCTION PRESS ROLLS

1—Beloit 113" drilled face x 22" diameter—anti friction bearings.

SUPERCALENDERS

1—Norwood 30" 5 roll, complete with motor drive.

TISSUE AND TOWELING MACHINE

1—B & S 90" single cylinder machine. Complete including pumps, piping, valves, enclosed drive and VS motor drive. Full details on request.

TRIMMERS POWER BACK GAUGES

1—Seybold 94" Model 15 ZJ.
1—Seybold 64" Model 12-Z.
1—Seybold 56" Dayton—10 knives.
1—Seybold 84" Dayton with motor and spare knives.
1—Seybold 74"—Model 8ZG with motor.

VACUUM PUMPS

1—Nash H-3 with 5 h.p. motor.
3—Nash H-4.
1—Nash L-3 with totally enclosed 5 h.p. motor.
1—Nash L-5.

VOITH INLETS

1—New Valley Iron Works 153" x 36" monel lined inlet and head box.
2—Valley Iron Voith Inlets, adjustable 83" to 86"—Brass lip, stainless steel apron.
1—Valley Iron Works—for 113" wire with wooden head box.
1—Valley Iron Works 151" stainless steel inlet and head box.
1—Bagley & Sewall 146" stainless steel clad high speed inlet and headbox.

VORTRAPS

7—Nichols 4" stainless steel Vortraps—rubber lined heads.

WET MACHINES

1—Rogers 72" x 48" Wet Machine. Double press sections.

YANKEE DRYERS

1—10 ft. diameter x 132" face with bearings
1—Beloit 12 ft. diameter x 140" face—75 lb. steam pressure.

For Sale

FOR SALE

One 54" left-hand Holyoke Supercalender, seven rolls, complete with drive except motor. For further information write:

OXFORD PAPER COMPANY
Purchasing Department
230 Park Avenue, New York 17, N. Y.

D-26

FOR SALE

Paper Cup making machine for conical flat bottom cups. New patent. High speed. Shown by appointment. Cash or partnership basis. You deal with the inventor in person. Address Box 55-436 care Paper Trade Journal. D-19

BOILERS—HIGH PRESSURE—We carry a large selection of ASME National Board high pressure boilers—gas, oil, coal fired—ranging from 10 to 1,000 hp.; each guaranteed in excellent condition; sales sheet and complete data sent upon request. Wabash Power Equipment Company, 31 E. Congress, Chicago, Ill.

OAM

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New Improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—40" Langston, 50" Inman and 54" Chambon Shear-cut Slitters & Rewinders; 36" Knowlton and 53" Beck Sheeters; No. 6 Brightwood Box Mach. Set-up and Folding Box Machines. Address Box 55-428 care Paper Trade Journal. TF

Wanted

WANTED

One No. 4, Shartles Hydrafiner.
Give detail specifications.
Prefer 900 R.P.M.

Write—Alpha Cellulose Corporation
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INDEX TO ADVERTISERS

PAPER TRADE JOURNAL

A

Acme Steel Co. —
Albany Felt Co. —
Allis-Chalmers 10
Aluminum Co. of America —
American Bitumuls & Asphalt Co. —
American Cyanamid Co. Paper Chemicals Dept. —
American Enka Corp. —
American Steel & Wire Co. 8 & 9
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. —
Apmew, Inc. —
Appleton Machine Co., The —
Appleton Wire Works —
Armco Drainage & Metal Products —
Armco Steel Corp. —
Armstrong Machine Works —
Asten-Hill Mfg. Co. —

B

Babcock & Wilcox Co. —
Bahnson Co. —
Bahr Bros. Mfg. Co. —
Bailey Meter Co. 59
Barrel, Wm., Co. —
Bauer Bros. Co. —
Beloit Iron Works Co. —
Bird Machine Co. 33
Bixby, R. W., Inc. 68
Black-Clawson Co. 21
Blaw-Knox Co. —
Bolton, John W., & Sons, Inc. —
Borden Co. 28 & 47
Bowsher Co., N. P. —
Brandon Sales, Inc. —
Brown Co. —
Buffalo Electro Chem. Co., Div. of Food Machy. & Chem. Co. —
Buffalo Forge Co. 16
Buffalo Pumps, Inc. —

C

Cady, E. J., & Co. —
Calgon, Inc. Back Cover
Cambridge Instrument Co. —
Cameron Machine Co. —
Carthage Machine Co. —
Central National Corp. —
Chemipulp Process, Inc. —
Chicago Bridge & Iron Co. 75
Cities Service Oil Co. —
Classified Advertising 68
Clearing House 68
Cleveland Worm & Gear Co. —
Clinton Foods, Inc. —
Columbus-Geneva Steel Div. 8 & 9
Columbia-Southern Chem. Corp. Sub. of Pittsburgh Plate Glass Co. —
Combustion Engrg. Co. —
Corn Products Sales Co. —
Crane Co. 72
Crucible Steel Corp. of America 36 & 37

D

DeLaval Separator Co. —
Detroit Stoker Co. —
DeZurik Shower Co. 67
Diamond Alkali Co. —
Dicalite Div., Great Lakes Carbon Corp. 6
Dietz Machine Works —
Ditz Machine Works 21
Dodge Mfg. Co. —
Dow Chemical Co. —
Dowell, Inc. —
Draper Brothers Co. —
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. —
du Pont, E. I., de Nemours & Co., Electrochemical Dept. —
du Pont, E. I., de Nemours & Co., Organic Dept. 41

E

Eaton Manufacturing Co. —
Ebasco Services, Inc. —
Egan, Frank W., & Co. 20
Eichleay Corp. —
Elixman Paper Core Co. —
Emerson Mfg. Co. —
English China Clays Sales Corp. —
Evans, W. P., & Son —

F

Falk Corporation —
Farrel Birmingham Co., Inc. 17
Farval Corp. —
Ferguson, H. K., Co. —
Fitchburg Screen Plate Co. —
Foxboro Co. —
Freeport Sulphur Co. —

G

Geigy Dyestuffs Div., Geigy Chemicals Corp. 73
General Dyestuffs Co. —
General Electric Co. —
Gibbs-Brower Co. —
Gilbert & Nash Co. —
Glidden Company —
Goodrich Chemical Co. —
Goodyear Tire & Rubber Co. —
Gottesman & Co. Front Cover
Graver Tank & Mfg. Co. —
Gulf Oil Corporation —
Gurley, W. & L. E. 67

H

Hazan Corp. Back Cover
Hall, Thomas W., Inc. 70
Hamblet Machine Co. —
Hendrick Mfg. Co. —
Hercules Powder Co. 12
Heyden Chemical Co. —
Holyoke Machine Co. 13
Hooker Electrochemical Co. 14
Huber, J. M., Corp. 34 & 35
Hudson-Sharp Machine Co. —
Hunnzeford & Terry, Inc. —
Huyck, F. C., & Sons 2

I

Improved Machinery, Inc. —
Inta-Roto Machine Co. —
International Wire Works —

J

Jenkins Brothers 19
Jenkins, M. W., Sons, Inc. —
Johns-Manville Corp. —
Johnson Corp., The —
Johnson, Alvin H., & Co. —
Jones, E. D., & Sons Co. 3

K

Knox Woolen Co. —
Kopperrs Co., Inc. 51

L

Langston, Samuel M., Co. —
Lindsay Wire Weaving Co. —
Link-Belt Co. —
Lockport Felt Co. 11
Lodding Engineering Co. 63
Lukens Steel Co. 18
Lyddon & Co. 65

M

Magnus Metal Co. —
Magnuson Products Corp. —
Main, Charles T., Inc. 66
Manchester Machine Co. —
Manheim Mfg. & Belting Co. —
Mead Board Sales, Inc. —
Mead Pulp Sales, Inc. —
Merrick Scale Co. —
Metallizing Engrg. Co. —
Minerals & Chem. Corp. —
Monsanto Chemical Co. —
Moore & White Co. 73
Morden Machines Co. —
Mount Hope Machinery Co. —
Murray, D. J., Mfg. Co. —

N

Nash Engineering Co. —
National Aluminate Co. —
National Paper & Type Co. —
National Starch Products, Inc. 15
National Tube Co. —
Naylor Pipe Co. —
Nichols Engrg. & Research Corp. —
Nopco Chemical Co. —
Nordstrom Valve Div. of Rockwell Mfg. Co. —
Norton Co. —

O

Ohio Injector Co. 27
Oldbury Elec. Chem. Co. —
Olin Mathieson Chem. Corp. —
Owen Bucket Co. —

P

Pandia, Inc. —
Paper Converting & Finishing Co. 72
Paper Converting Mch. Co. —
Parsons & Whitemore 65
Penick & Ford, Ltd. —
Pennsylvania Industrial Chem. Corp. —
Perkins, B. F., & Son, Inc. —
Perkins Goodwin Co. —
Personnel Service Associates —
Pioneer Paper Stock Co. —
Pittsburgh Piping & Equip. —
Pittsburgh Plate Glass Co. —
Poirier Control Co. 66
Potdevin Machine Co. 73
Powell Valves —
Price & Pierce, Ltd. —
Pusey & Jones Corp. 23

R

Railway Supply & Mfg. Co. —
Raymond, Chas. P., Service, Inc. 68
Read Standard Corp., Bakery Chem. Div. —
Read Standard Corp., Blower Stoker Div. —
Record Fdy. & Machine Co. —
Reliance Elec. & Engrg. Co. 24
Rem-Cru Titanium Inc. —
Restigouche Corp. —
Rice Barton Corp. —
Riedel, Gus & Son —
Riegel Paper Corp. —
Rockwell Mfg. Co. —
Rohm & Haas Co. —
Ronningen-Petter Co. —
Roosevelt Paper Co. —
Roots-Connersville Blower Co. —
Ross, J. J., Co. 69 & 72
Ross, J. O., Engineering Co. —
Ross-Midwest Fulton Co. —
Ross Paper Machinery Co. 70 & 71
Rust Engineering Co. —

S

Sandusky Fdy. & Mch. Co. —
Sandy Hill Iron & Brass Works —
Seaboard Air Line R. R. Co. 73
Shartle Bros. Machine Co. 21
Shuler & Benninghofen —
Sirrine, J. E., Co. 72
Smidth, F. L., & Co. —
Smith & Winchester Mfg. Co. —
Socony Mobiloil Co., Inc. —
Sonoco Products Co. —
Stebbins Engrg. Co. 61
Stevens, Charles R., Inc. —
Stone & Webster Engrg. Corp. —
Stowe-Woodward —
Sun Oil Co. —
Swenson Evaporator Co. —

T

Taylor Instrument Co.'s —
Taylor Stiles & Co. —
Tennessee Coal, & Iron Co. 8 & 9
Texas Co. 4
Texas Gulf Sulphur Co. —
Thiele Kaolin Co. —
Thomas Paper Stock Co. 73
Timken Roller Bearing Co. —
Titanium Pigment Corp. —
Torrington Co. 26
Townotor Corp. —
Tracerlab, Inc. —
Trend Tube Co. 40 & 41
Tube Turns Plastics —

U

United Carbon Co., Inc. —
United Paper Machinery Corp. —
U. S. Rubber Co. —
United States Steel Export Co. 8 & 9
United States Steel Supply Co. 8 & 9
U. S. Steel Corp. 8 & 9

V

Valley Iron Works Co. 53
Vanderbilt, R. T., Co. —
Vapo Systems —

W

Waldron, John, Corp. —
Walworth Co. 7
Weber, H. G., & Co., Inc. —
West End Chemical Co. —
Westinghouse Electric Corp., Sturtevant Div. —
West Virginia Pulp & Paper Co. 67
Weyerhaeuser Timber Co. —
Wheeler Roll Co. —
Whiting Corp. —
Wiegand, Edwin L., Co. —
Williams Apparatus Co., Inc. —
Williams-Gray Co. —
Wisconsin Wire Works —
Wyandotte Chemicals Corp. —

Y

Yale & Towne Mfg. Co. —

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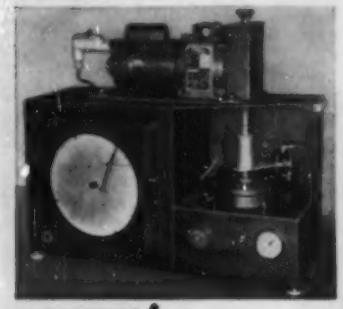

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